TECHNOLOGY DEPT.

Gas Journal

Vo. 263. 102nd Year. LONDON, AUGUST 23, 1950. No. 4551. Price 1/-

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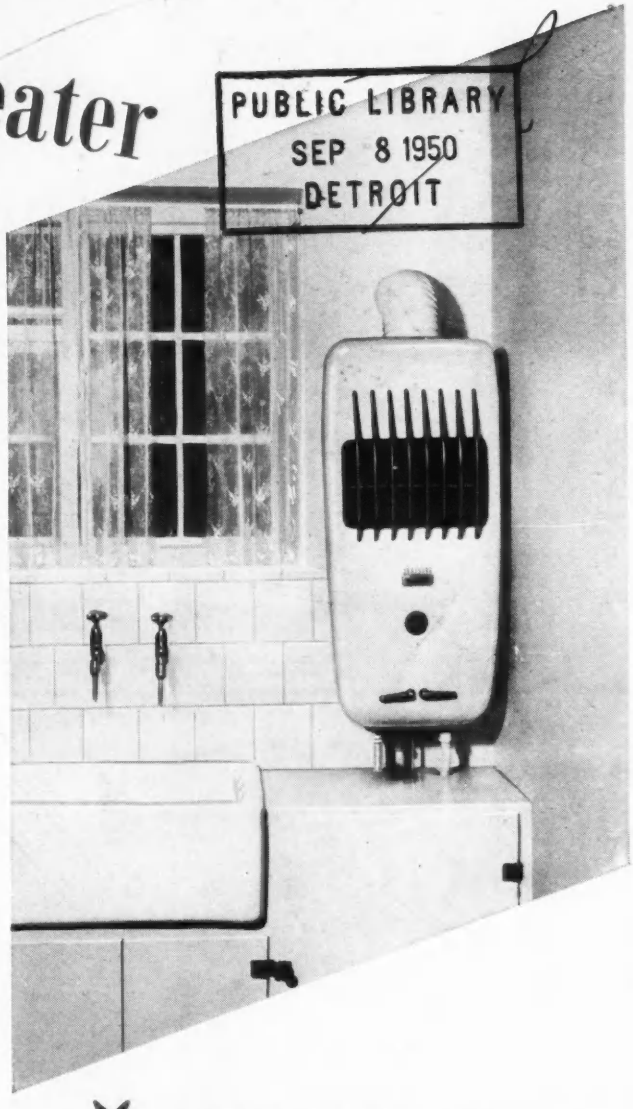
DETROIT

THE Water Heater WITH THE MOST-WANTED FEATURES ...



Every worth-while feature that home-owners have asked for has been included in the De La Rue Instantaneous Multipoint Water Heater. In addition, the needs of gas fitters have been carefully considered to make the De La Rue easy to install and simple to maintain. That is why this De La Rue Water Heater is rapidly becoming the most popular of all—write today for full details.

- Unlimited Hot Water, winter and summer.
- Economical with gas and money.
- Built-in draught diverter, stops discolouration of walls.
- Models available for cistern or mains supply.
- Low overall height, ideal for flats.
- One-piece outer casing for quick fixing, easy accessibility.

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Instantaneous Multipoint GAS WATER HEATER

THOMAS DE LA RUE & CO. LTD. (Potterton Gas Division), Imperial House, 84/86 Regent Street, London, W.1.
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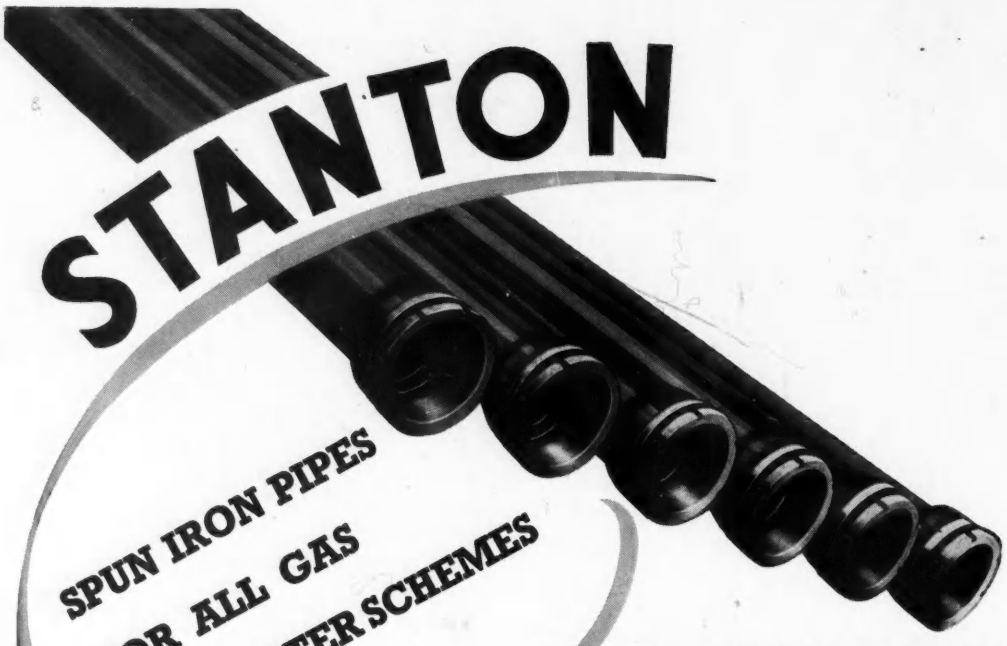

SPUN IRON PIPES
FOR ALL GAS
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THE STANTON IRONWORKS
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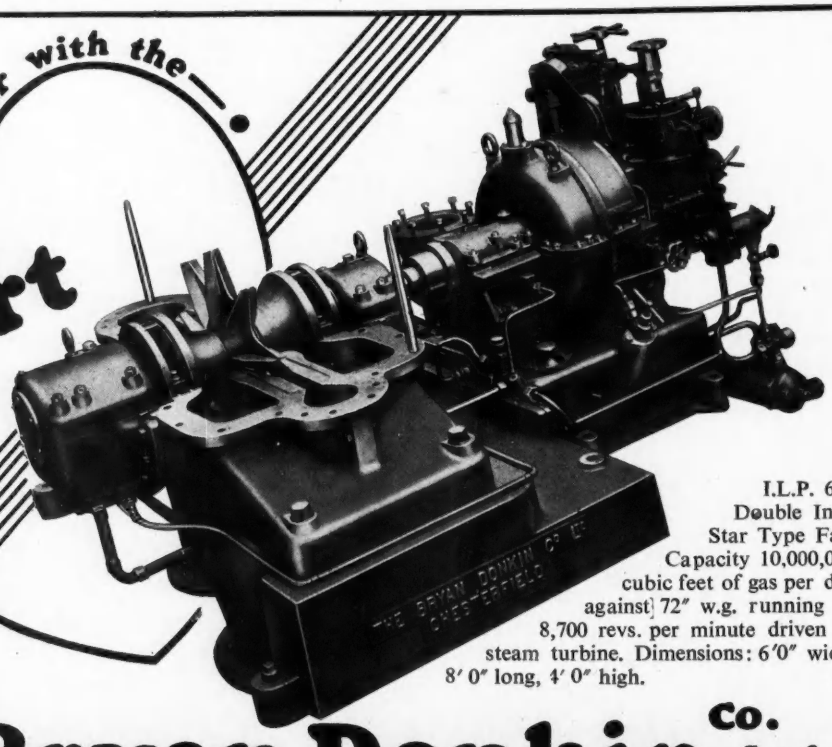
NEAR NOTTINGHAM

the small exhauster with the—

big heart



I.L.P. 640
Double Inlet
Star Type Fan.
Capacity 10,000,000
cubic feet of gas per day
against 72" w.g. running at
8,700 revs. per minute driven by
steam turbine. Dimensions: 6'0" wide,
8' 0" long, 4' 0" high.

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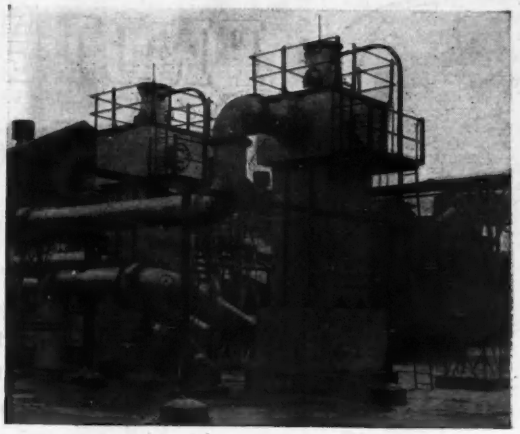

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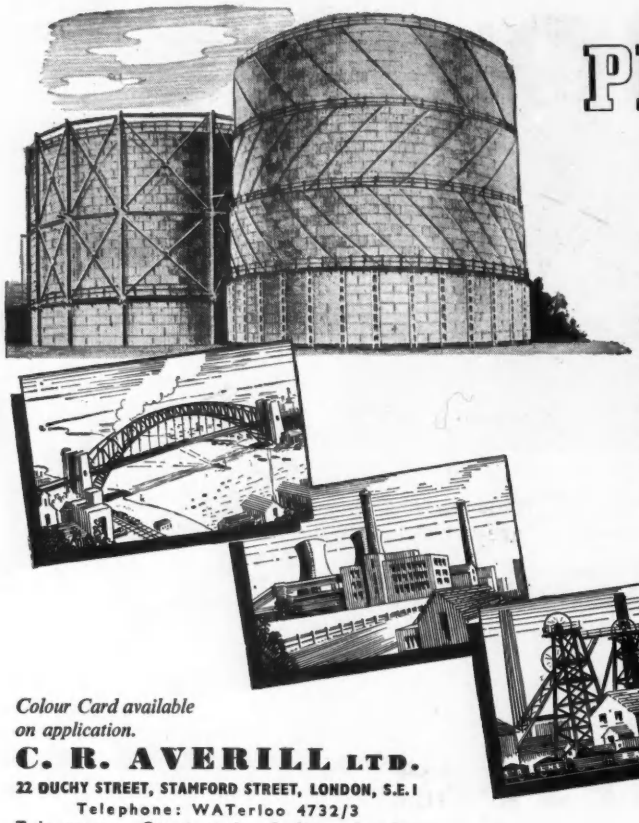

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In long random lengths, each complete with "Victaulic" Joint and grooved ends. All re-conditioned and treated anti-rust solution externally.

170,000 ft. 4 in. nom. bore ditto

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Bends, Tees, Y-Pieces, Reducing Pieces, Flanged Adaptors and Flanged Valves also available, as below.

ITEM	SIZE		
	2 in.	4 in.	6 in.
Joints, medium, complete	8,300	13,000	18,400
,, ,, w/o rings	79	—	—
Joint Rings	600	18,500	12,341
Tees, equal	1,585	1,651	—
Tees, offset 45°	561	545	—
Tees, reducing 4 in. grooved to 3 in. screwed	—	242	—
,, ,, 4 in. ,, ,, 2 in. ,,	—	360	—
,, ,, 4 in. ,, ,, 2 in. flanged	—	174	—
,, ,, 6 in. ,, ,, 2 in. ,,	—	—	187
,, ,, 6 in. to 4 in.	—	—	720
Bends, 90°	654	725	—
Bends, adjustable	1,572	3,582	742
Bends, 135°	980	1,500	968
Bends, 157½°	1,142	763	771
Reducers, long, 2 in. grooved to 1 in. screwed	807	—	—
,, short, 2 in. ,, ,, 1 in. screwed	654	—	—
,, 4 in. grooved to 2 in. screwed	—	1,140	—
,, 4 in. ,, ,, 3 in. ,,	—	740	—
,, 6 in. to 4 in. long	—	—	1,008
,, 6 in. ,, 4 in. short	—	—	332
Ends, blank	802	1,480	360
10° Setting Pieces	1,160	1,664	912
Adaptors, screwed M to grooved	2,071	335	678
,, flanged to groove	4.120	—	1,509
,, flange to plain ends	—	5,254	—
Flange Adaptor Joints	—	74	—
Elbows, 90°	542	484	236
Strainers	—	63	—
Valves, fullway flanged	656	232	165
,, reflux flanged	219	380	653
,, air, 2 in. flanged inlet	—	1,189	—

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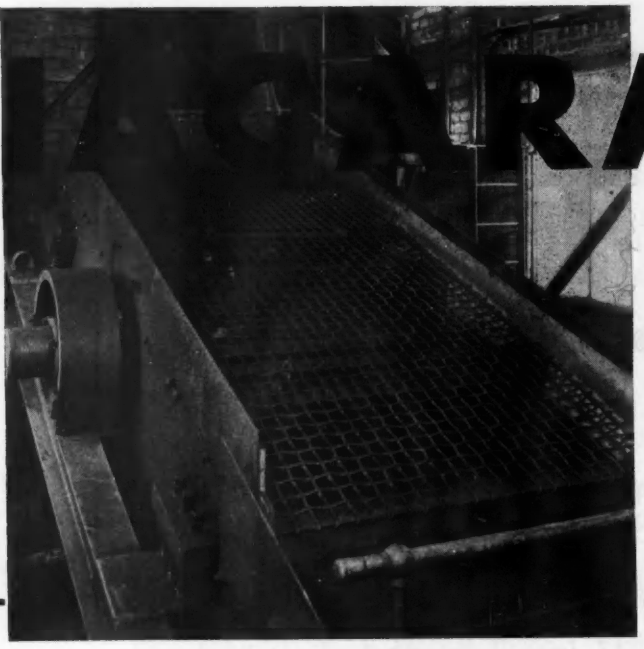

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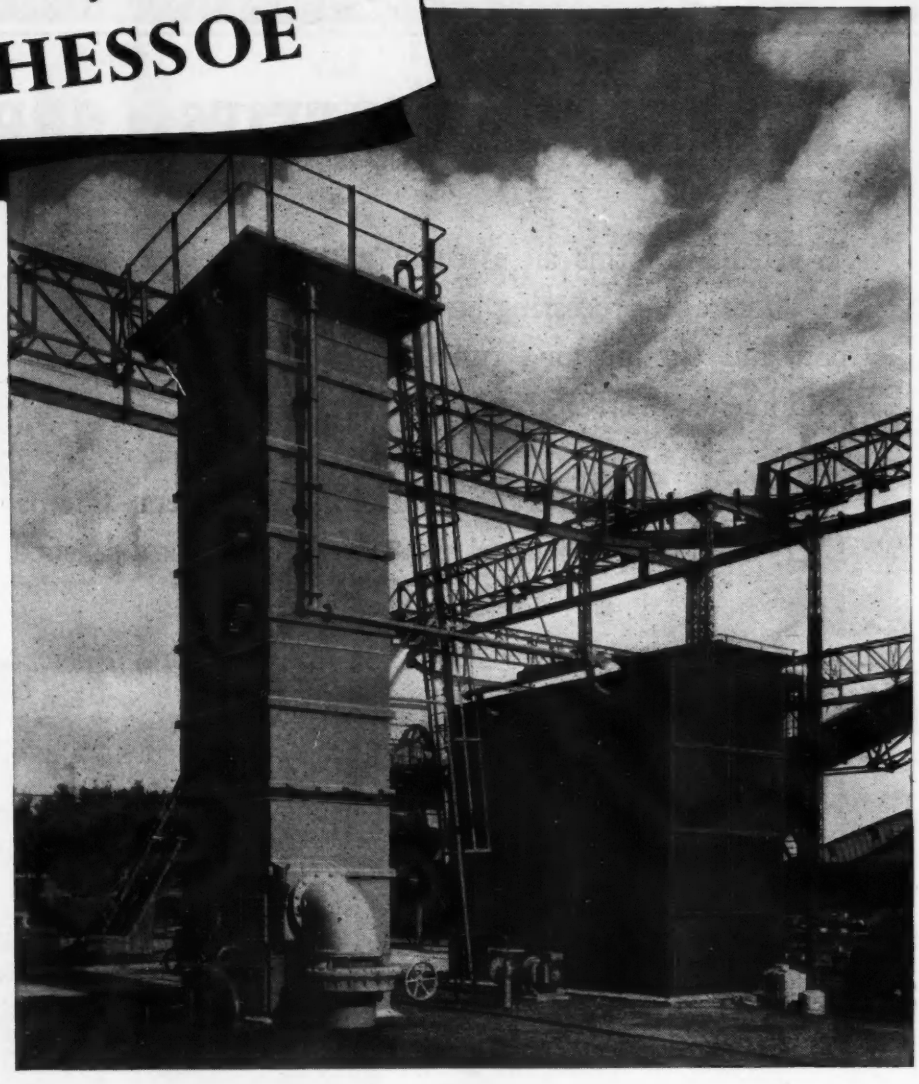
Vertical Tube Condenser

by

WHESSOE



The photograph shows a WHESSOE 6-pass vertical tube condenser before completion at Hilsea (Portsmouth) works of the Southern Gas Board. It works in conjunction with a Visco forced-draft water cooler, supplied through Whessoe as main contractors.

The condenser has a capacity of 4 million cu. ft. per day and a maximum water throughput of 10,500 galls. per hour. Recirculation through the water cooler reduces the cost of the cooling water, which forms the bulk of gas cooling charges, by a figure which may amount to £3,000 p.a.

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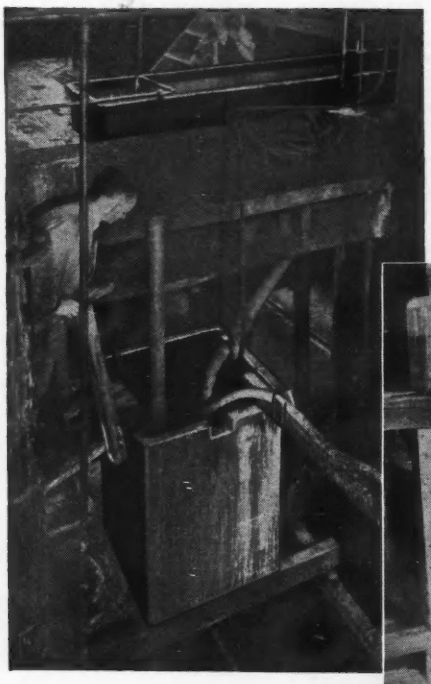
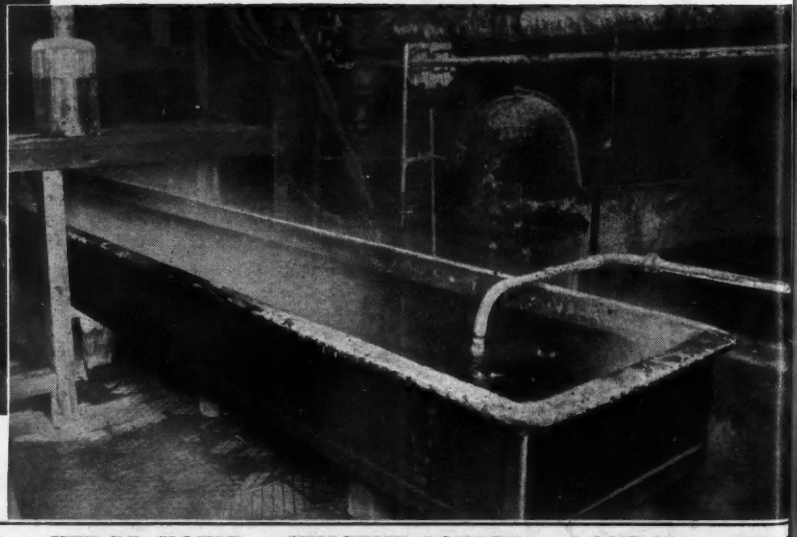


Silvertown rubber and ebonite tank linings at Partington Gas Works, Urmston, Manchester.

(1) Re-heating tank for Ammon. Sulphate;

(2) Acid liquor circulating pot. Normal temperature: Inlet 54°C., outlet 72°C. Temperature varies with flow of liquor and at times reaches 100°C.



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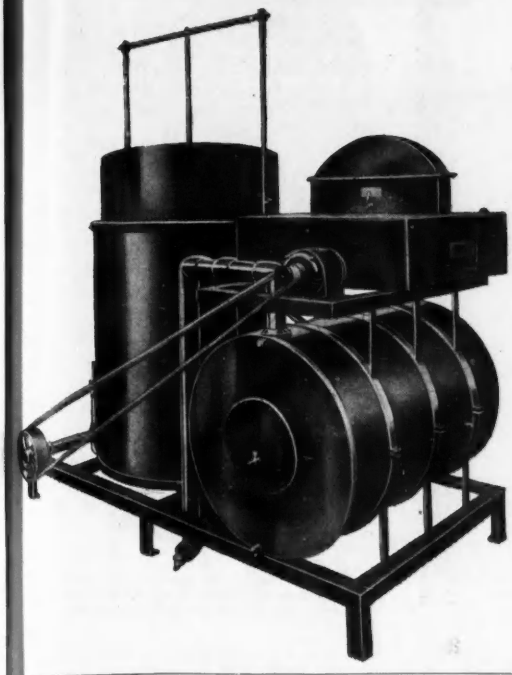

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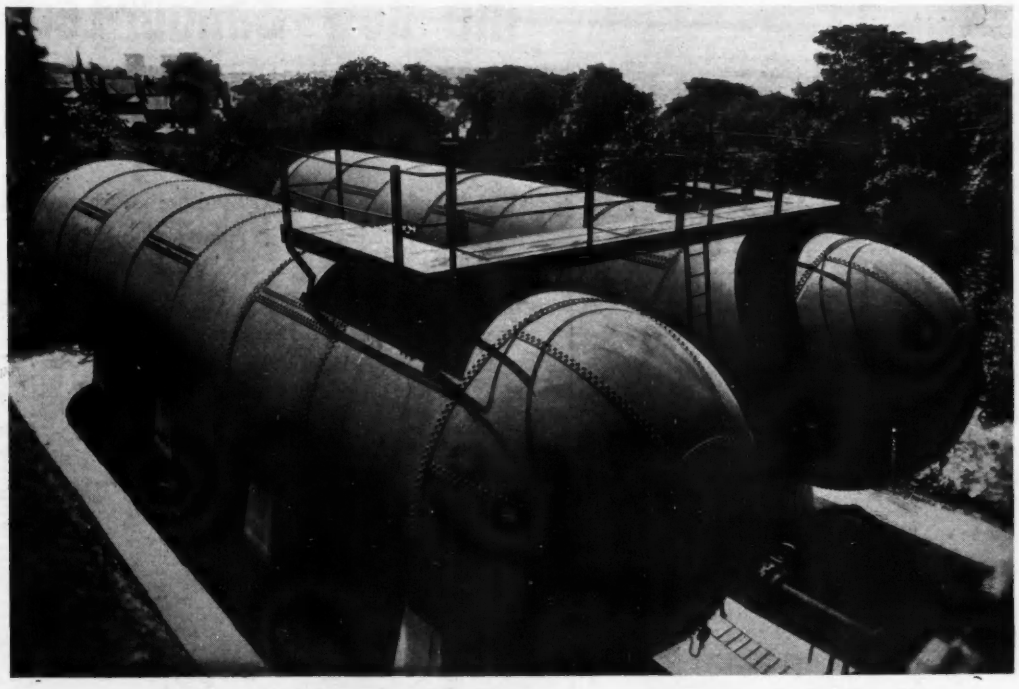

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RIVETED HIGH PRESSURE GASHOLDERS. 60 lb. per sq. in. working pressure

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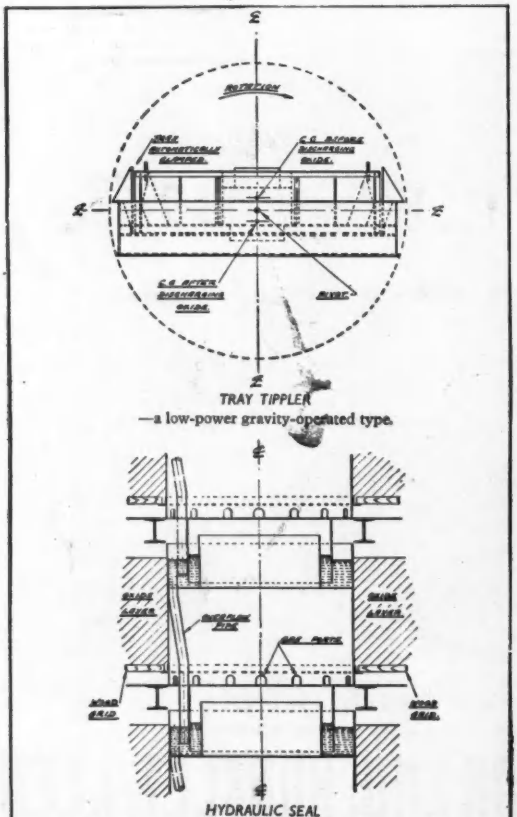
★ A TRIUMPH IN SPACE ECONOMY AND MODERN PURIFICATION TECHNIQUE

An impression of the new Balfour-Lecocq Tower Box Purifier—the first of its kind—now being constructed for an East Midlands undertaking.

the new Balfour-Lecocq TOWER BOX PURIFIER

This latest design of Tower Purifier incorporates all the known advantages of the process and also many new features which have been recently developed. Particular points of interest are reduction in ground space, complete mechanisation, fool-proof jointing between trays, separate drainage for each tray, minimum surfaces for painting, etc., unidirectional flow of gas, and ease of change-over of towers which can be carried out within a few minutes.

The technical resources of the Balfour organisation are at the service of those requiring detailed information on the application of Tower Purifiers to their own needs.



TRAY TIPPLER
—a low-power gravity-operated type.

HYDRAULIC SEAL
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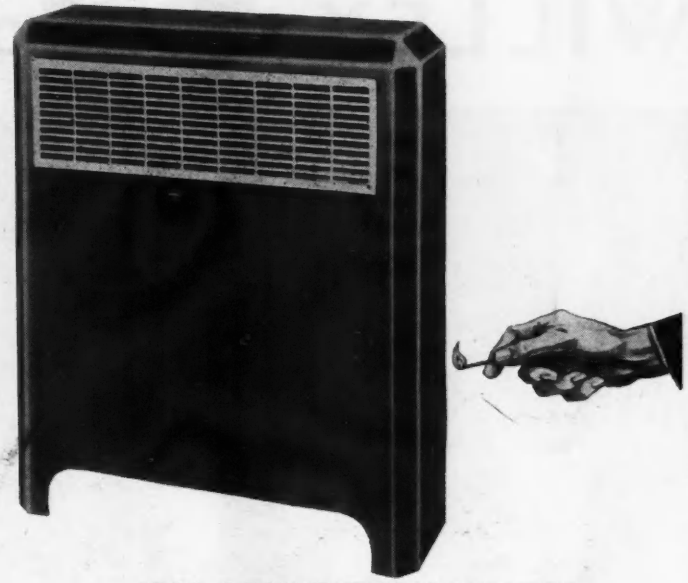
THE CONVAIRE LIT IN A FLASH

"Just turn on the tap and apply a match and the unique lighting device ensures immediate ignition of every burner"

The "Convaire" is a new Convector of attractive and dignified appearance. Finished in Dark Bronze with Chromium plated removable grill. Five non-aerated burners are regulated by a governor to a gas rate of 18 cu. ft. per hour. Maintenance costs are negligible—there being no glass to get broken.

Height 26 ins.
Width 22 ins.
Depth 7⅞ ins.



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GAS CONVECTOR RADIATOR

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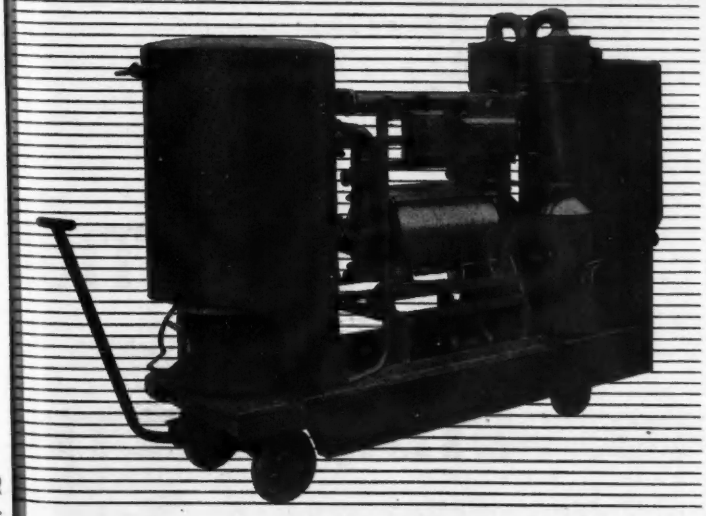
B.V.C *Dual-purpose* GAS WORKS MODEL



The B.V.C. Dual-Purpose Gas Works Model T87 is a very efficient mobile unit. with water-cooled container for the removal of hot dust from the tops of retorts. Can be used for general cleaning by either one or two operators. We shall be pleased to send you full information on request.

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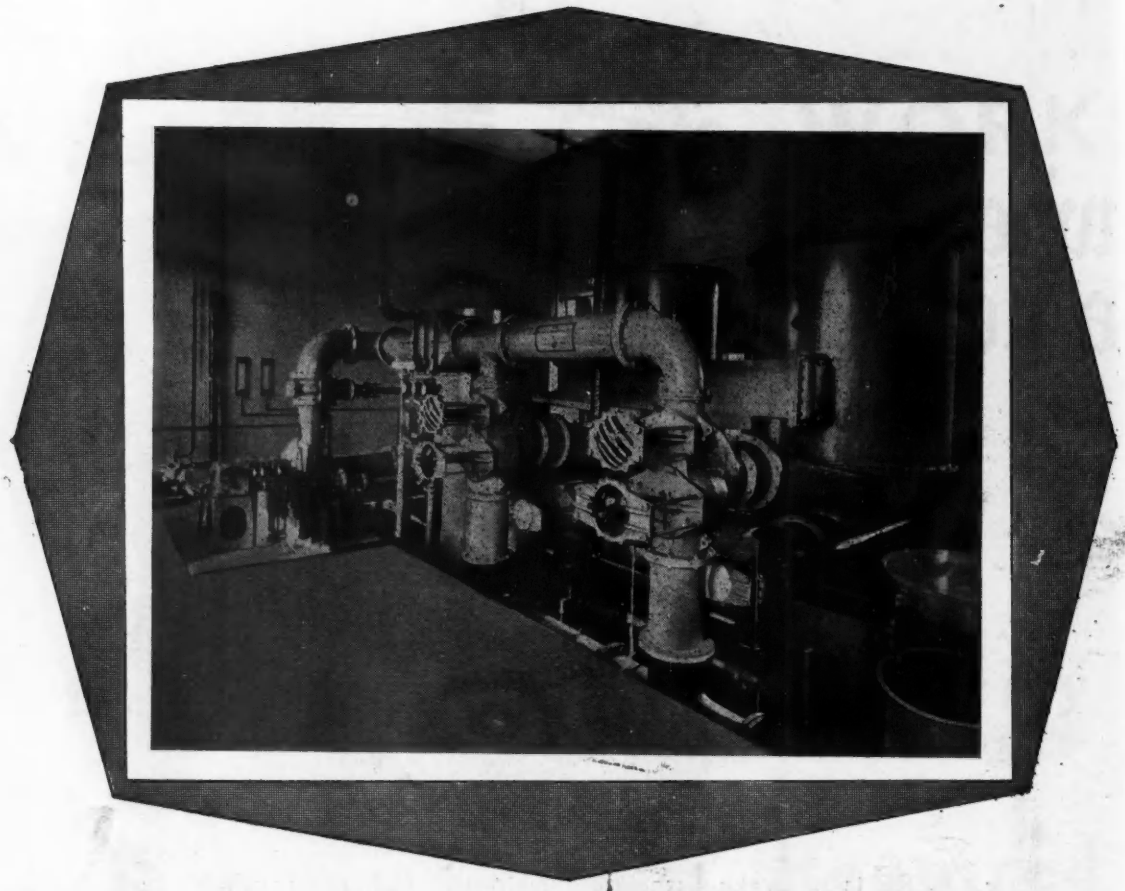

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A BIG ADVANCE IN PROTECTIVE PAINTING by Foochow

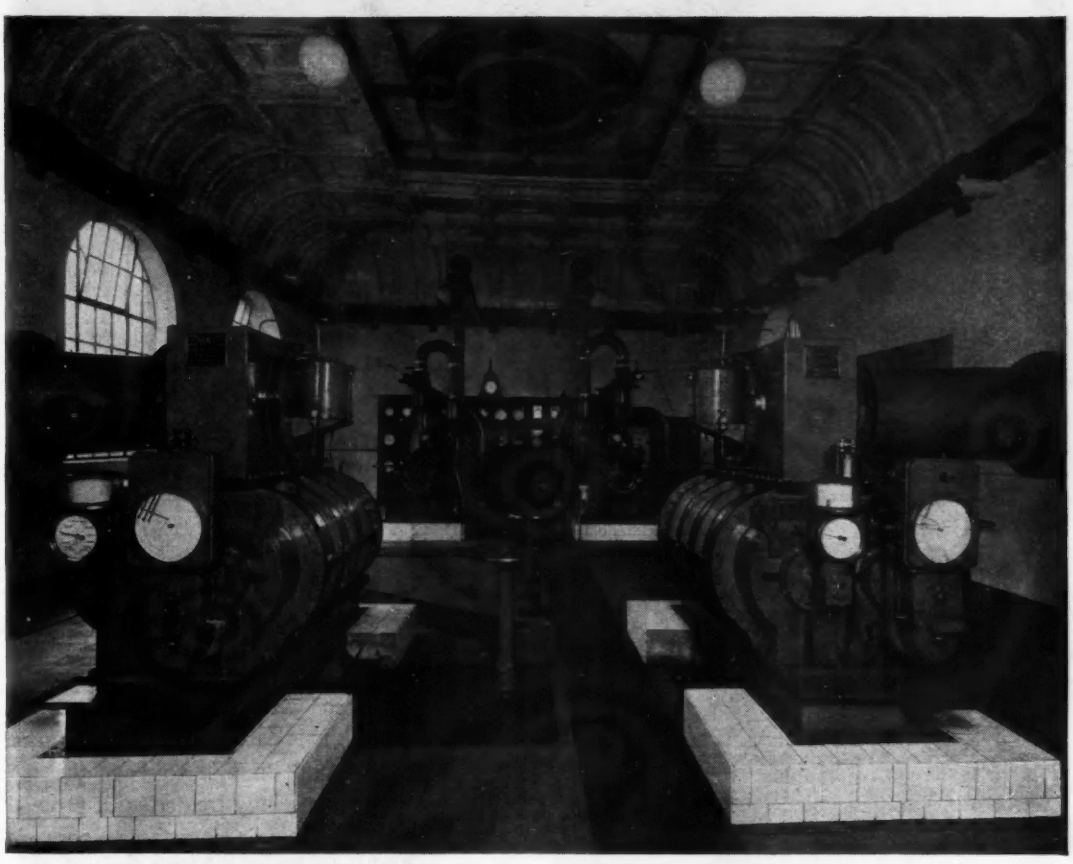

Illustration shows one of the largest Exhauster and Compressor Houses in the North of England—decorated throughout in FOO-3-4

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THE NEW SUPER SYNTHETIC ENAMEL THAT IS HEAT, STEAM, OIL AND GREASE RESISTING

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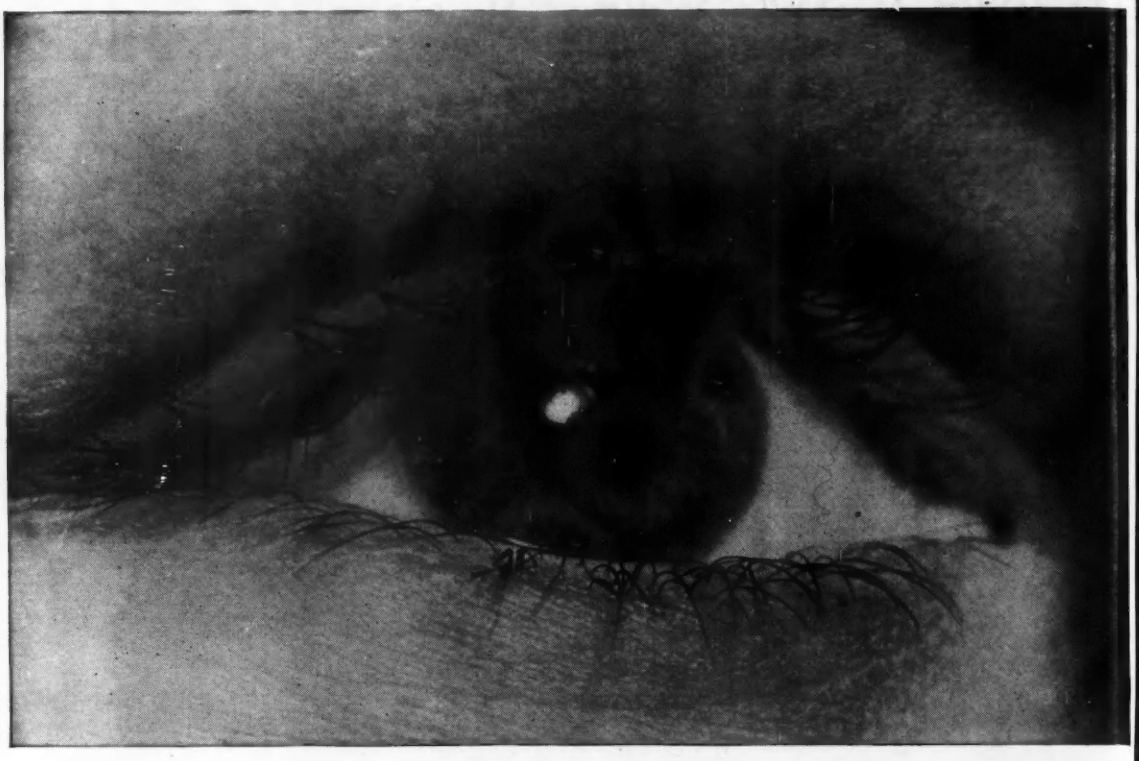

THE EXACTITUDE OF NATURE

The pupil of the eye is remarkable for its amazing adaptability. By automatic expansion and contraction it deals with changes of illumination varying from brilliant sunshine to soft moonlight. The degree of change is so exact that only rays of light sufficient to enable man to see are permitted to fall upon the sensitive part of the eye and relayed to the brain.

The wide and automatic response of the pupil to every change of light reminds us of the immediate reaction of 'Multitest' diaphragms to the slightest change in the flow of the gas stream. This delicate sensitivity is due to the particular suppleness of the leather from which these diaphragms are made. Each skin is carefully selected—only the very best are good enough to bear the name 'Multitest'—and specially treated with protective oils to make it durable and resistant to corrosion. Years of experiment and scientific research ensure that 'Multitest' diaphragms have that smooth easy movement which keeps pressure absorption in gas meters and governors down to the minimum. So, for accuracy and efficiency always choose 'Multitest'—the precision-cut diaphragm made to give trouble-free service for years. Available in all sizes to suit every type of meter.

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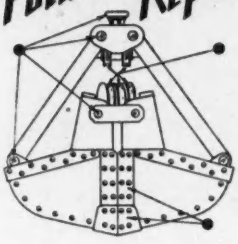

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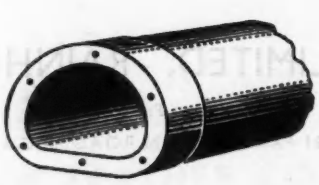

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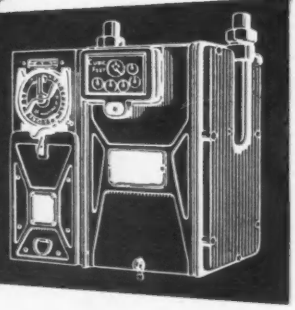

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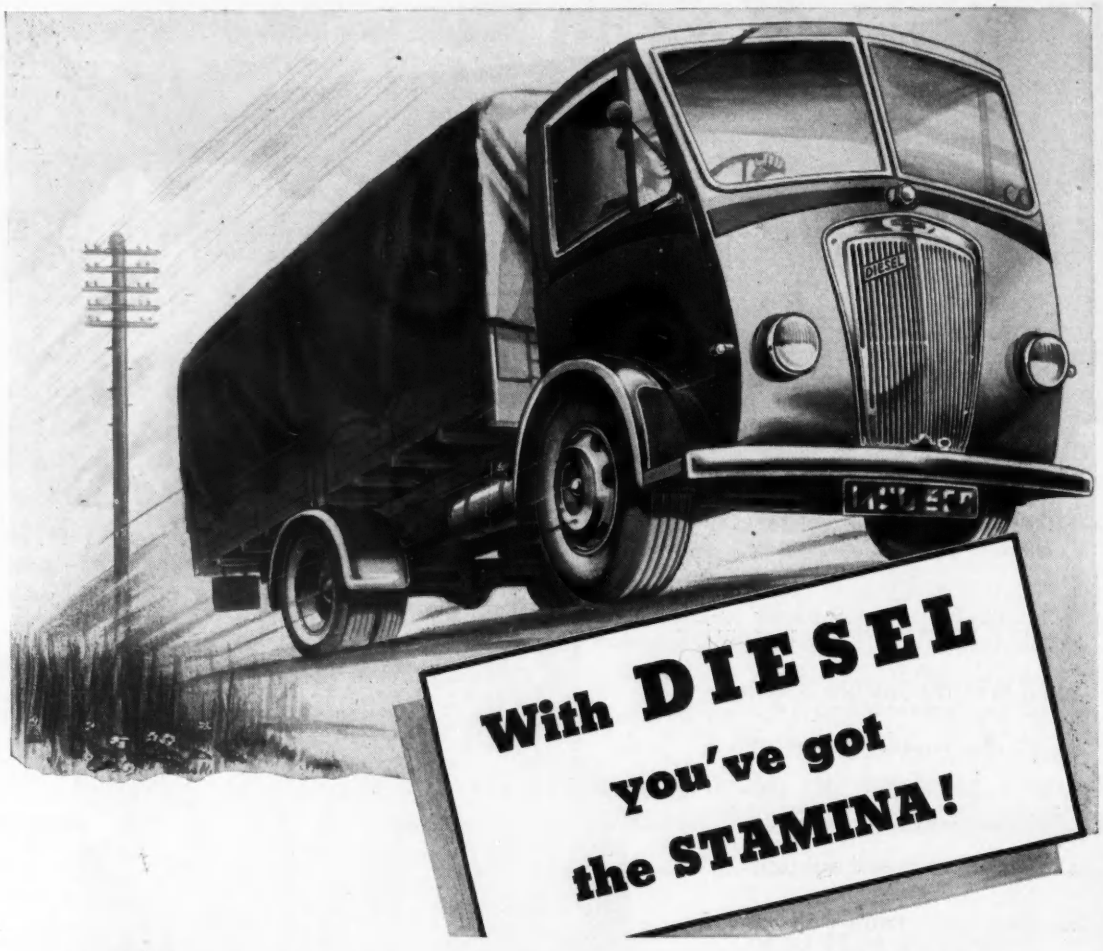

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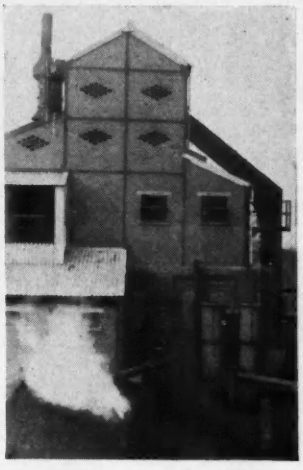

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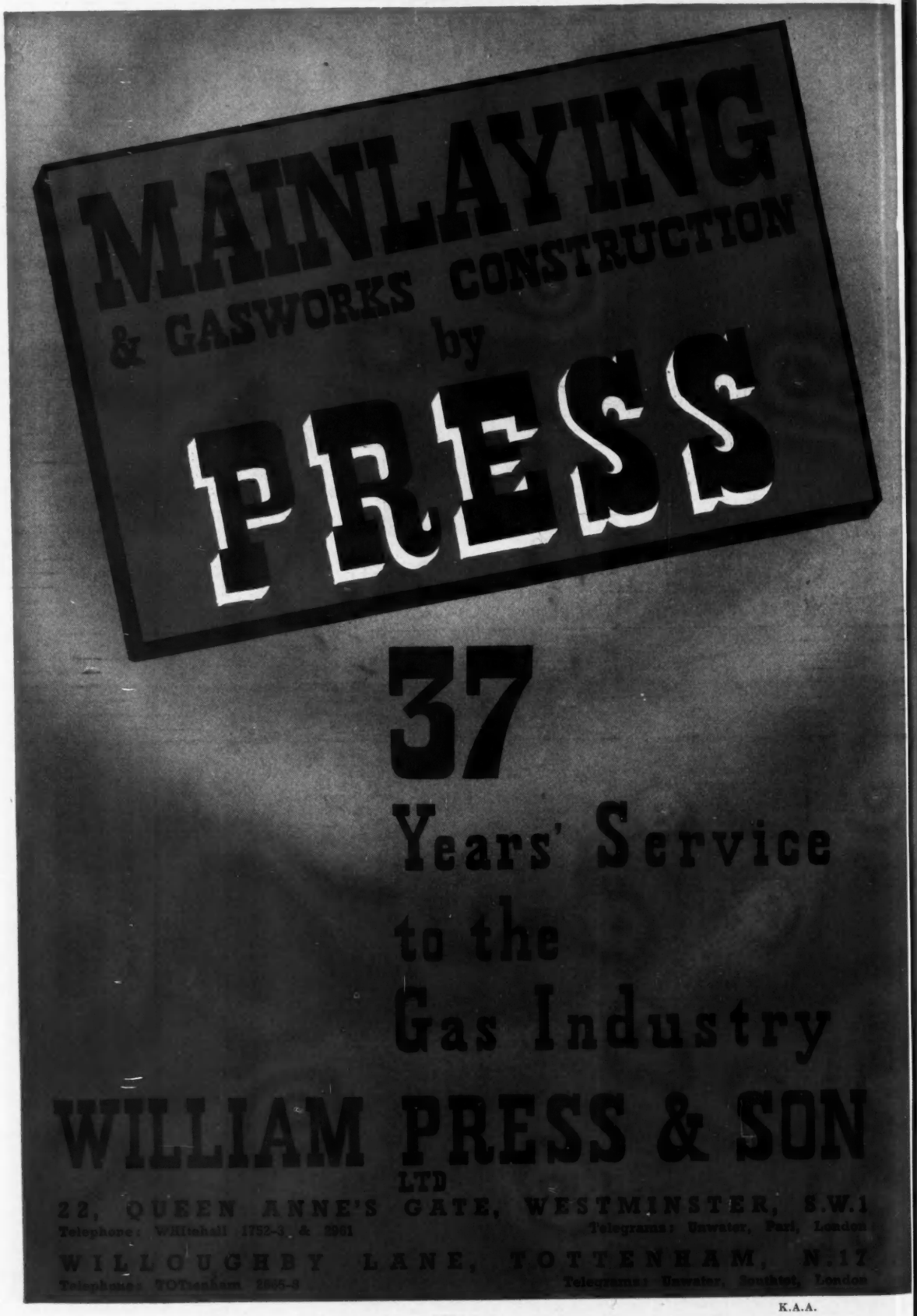
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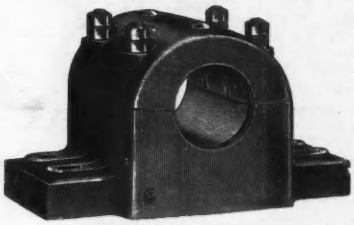

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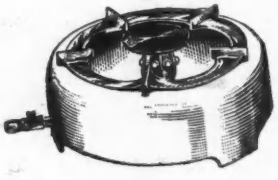

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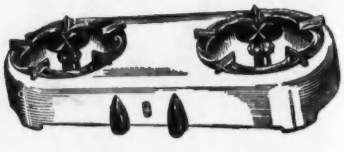
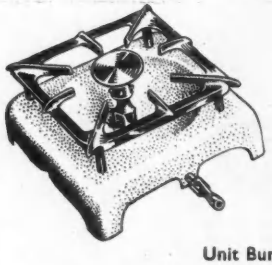


Hotplate FA/2



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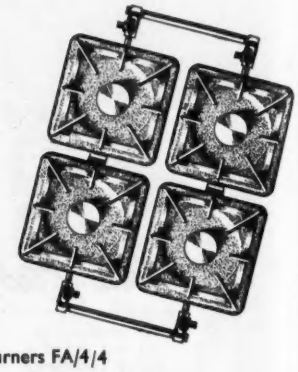

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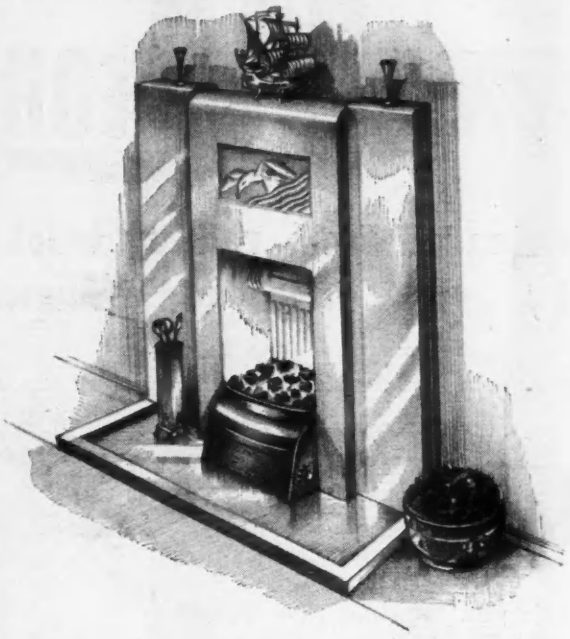

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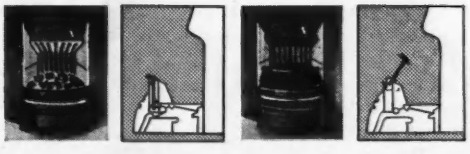

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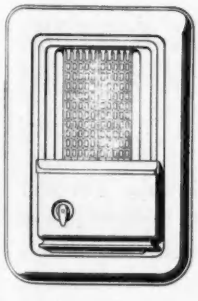

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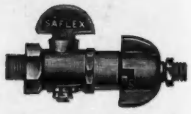

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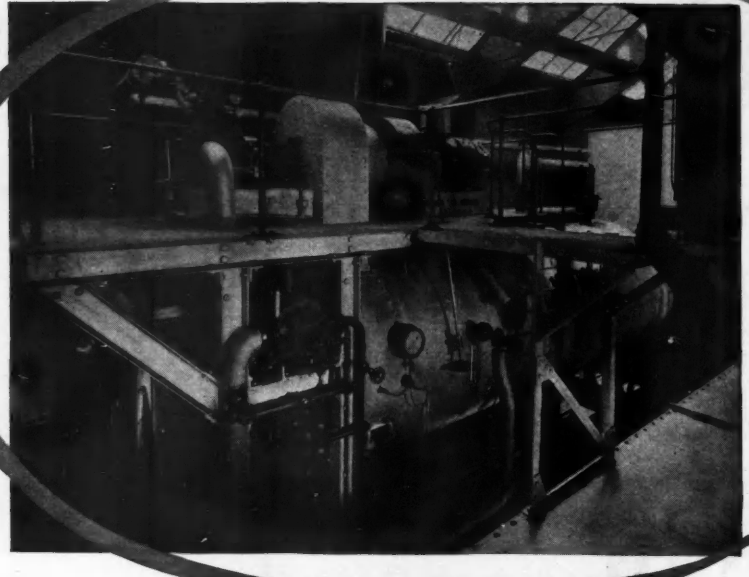

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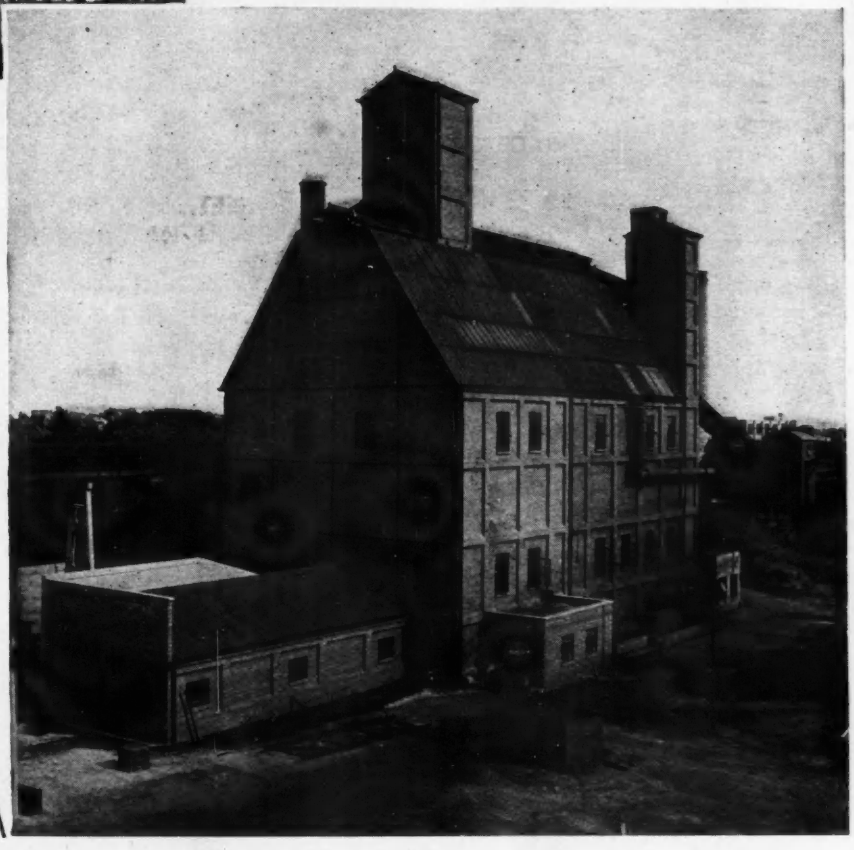

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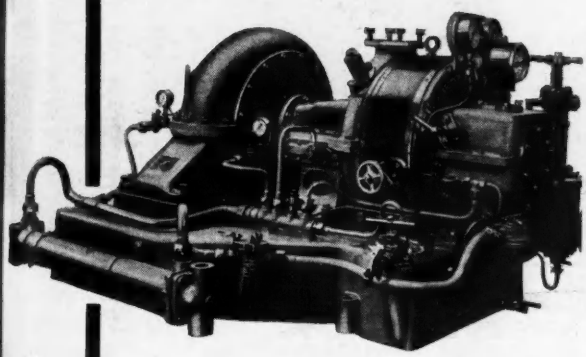

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VOL. 263 NO. 4551 AUGUST 23, 1950

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The dispute between the London Society of Compositors and the London Master Printers' Association continues, and no overtime is being worked. As a result, there has been no alternative but to reduce temporarily the number of pages of the Gas Journal. *Within the enforced smaller compass we are doing all possible to maintain the* Journal *news and technical service, though abbreviation is inevitable till the dispute is settled. In the difficult circumstances we ask subscribers' indulgence.*

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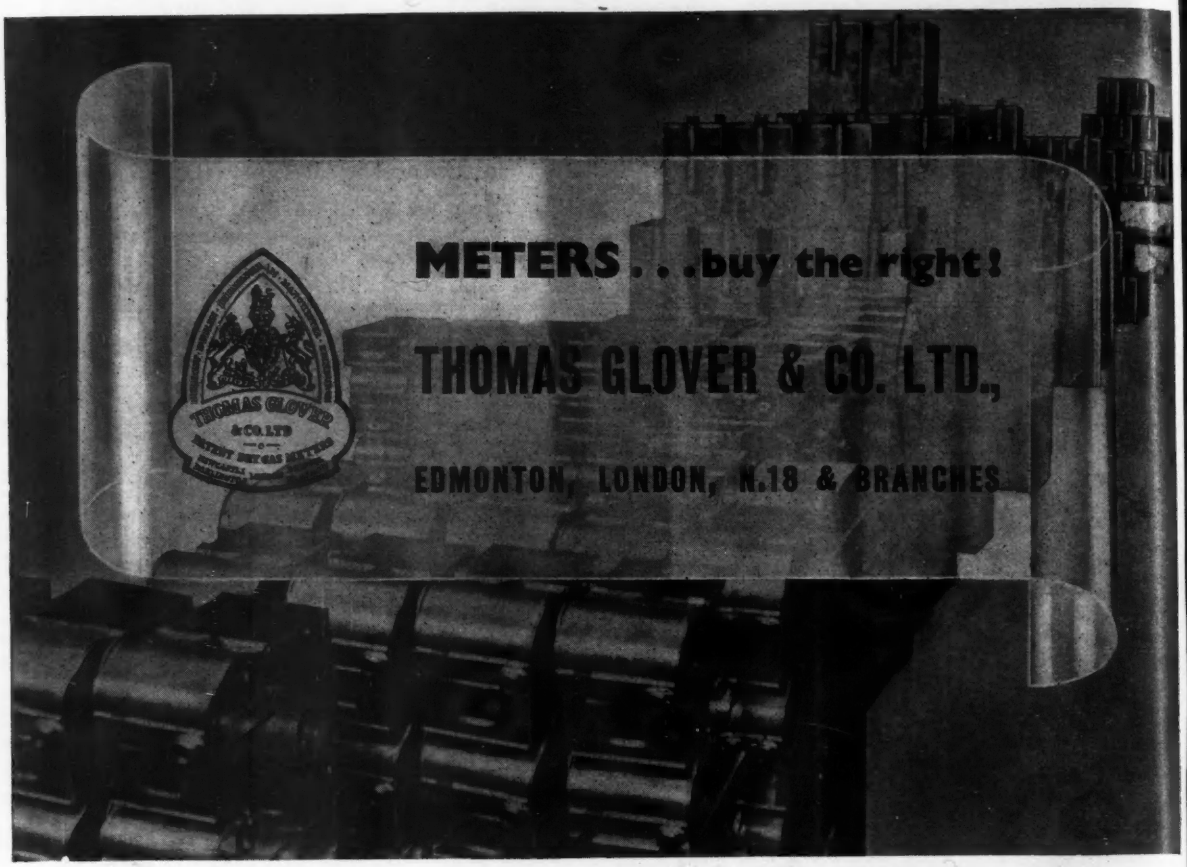
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GAS JOURNAL

VOL. 263. No. 4551 102ND YEAR AUGUST 23, 1950

THE PEAK LOAD

CATERING for the peak load is, of course, one of the major problems of the gas industry, and it is a subject to which Mr. F. M. Birks, Deputy Chairman of the North Thames Gas Board, has devoted a great deal of study, the outcome of which will undoubtedly influence gas industry policy in the erection of plant and in the design of distribution systems. Fresh in our mind is the significant paper which he presented a year ago at the International Gas Conference. In that paper (epitomised in the *Journal* of July 6, 1949) he gave a chart showing the seasonal heating load parted from the remainder of the consumption. Division was made into three sections corresponding with defined temperature ranges. The first was between 65°F. and 41°F.; the second between 41°F. and 32°F.; the third between 32°F. and 20°F., which latter was the coldest 24 hr. during the 20 years reviewed by the author. Another chart showed the magnitude of the gas consumptions for space heating during cold weather periods for the 20 yr. period. The space heating load—the conditions covered Greater London—down to the average winter temperature of 41°F. represented only 42% of the maximum demand. The 32°F. level corresponded with 68% of maximum output. Peaks below this temperature, although responsible for some 32% of the maximum heating demand, had a negligible load factor.

The foregoing analysis which we have quoted from the paper in question is of great importance; and it led Mr. Birks to conclusions which will have—and, indeed, are already having—far-reaching effects. He said plainly enough that carburetted water gas might well carry a higher proportion of the seasonal load than is at present common practice in this country. And he added that, to obtain the technical advantages of smooth and steady operation of the carbonising plant and to find the most constant employment for labour, all short-term fluctuations in demand might be met by carburetted water gas even during the summer months. He also pointed to the capital outlay involved by the storage of the raw materials for gas-making and emphasised that the storage of gas oil involves lower capital charges than any of the other available fuels. Mr. Birks' paper was, of course, given when the clouds on the international horizon were less black than they are today, but the fundamental conclusions remain unaltered.

We return to the matter at this juncture in the light of the remarks made by Mr. Birks, as President of the Institution of Gas Engineers, in proposing the toast of the Manchester District Association of Gas Engineers at the recent meeting of the Association at Leeds (reported in the *Journal* of August 2). His opening comments were naturally concerned with the Association's history, mentioning that the Association's decision to become a District Section of the Institution of Gas Engineers constituted a landmark in the history of both bodies—a 'portent of the future happy relationships which were bound to spring from such amalgamations.' And he suggested that greater opportunities than hitherto would be given for envisaging and discussing problems in a wider field. An example was this all-important question of peak loads. As a result of talks with gas engineers in various parts of the country he has realised how puzzling this question is and how necessary it is to understand the different approaches to it. He said that from the area boards' returns it was now possible to compare the load factors which applied to certain well-defined sections of the country. The variations were, in fact, very much greater than he had thought possible. The problems, for instance, of the Scottish Gas Board (because it has the best load factor) and those of the North Thames Gas Board (with the worst load factor) are virtually poles apart. Other areas, whose make-up domestically and commercially are very similar, show such a similarity in load factor that it is difficult to believe that the element of chance enters into the matter. One of the factors which certainly does enter largely is the overall spending power of the community comprising any one area. The greater the spending power, the more serious becomes the peak load problem from the gas undertaking's point of view. By and large, however, it is up to the gas industry to meet peak demand as far as is ever possible within the ambit of reasonable economics; and Mr. Birks' study has already helped greatly in pointing the way to a solution. Also, one must bear in mind the fact that as it stands today the gas industry is a two-fuel industry, and that to the industry the peak load problem does not constitute the 'nightmare' problem of the electricity peak, the description given to it by the Minister of Fuel and Power in the House of Commons last month.

THE COKE OVEN IN THE GASWORKS

READING the excellent case put forward for the coke oven in the French gas industry by MM. Boulin and Verret at the Fourth World Power Conference (abstracted in pp. 399 and 400 of today's *Journal*) one is led to examine how far these arguments are valid in a consideration of the position of the coke oven in the gasworks of Great Britain. It is admitted that even in France the coke oven is only admissible in works of considerable capacity. Increase of economy with increase of capacity appears to have no absolute limit but the curve of economy begins to flatten out around a daily throughput of 1,500 tons. This would correspond to a daily gas production of some 22 mill. cu.ft. and an annual output of 6,000 mill. And since the coke oven is essentially base-load plant it would achieve, if not its optimum, a high degree of economy only when amalgamated with or incorporated in a much larger unit of supply. That it is base-load plant follows from the impossibility of letting down a coke oven battery once it is put into commission, a difficulty which is admitted though with some slight qualifications.

The objection that the gas-coke-oven requires more coal and produces more coke than the normal gasworks retort to produce a given quantity of town gas is not completely answered. The authors are more concerned to refute the objection that the coke oven is characterised by a want of flexibility in its adaptation to gas requirements and seasonal variations in demand. Their most crushing answer is that the coke oven possesses great flexibility when designed for compound heating: 'The possibility of changing from rich gas to producer gas heating permits an increase in the volume of gas available for distribution to the extent of as much as 65%.' It seems to us that this triumphant claim shows a callous disregard of the intrinsic value of town gas, as the highest grade of true fuel, which must be staggering to the British gas engineer.

The fact is that French fuel economy is obsessed by the requirements of the steel industry. France is very far from self-supporting in coal (and therefore in coke) supplies and it is quite understandable that the French economist should be powerfully attracted by plant which can, at will, produce large quantities of metallurgical coke in conjunction with gas supply. But that preoccupation is not ours. We are, and at our economic peril must continue to be, self-supporting in coal. Our preoccupation is with the possibility of conserving our independence in this matter in the face of an ever-increasing demand for gas—to say nothing of electricity and other forms of fuel and energy. And here we may well turn to the statesmanlike reflections of Mr. Wakeford in the Institution discussion of the paper by Mr. James Carr and Dr. Marsden, 'The Gas Industry: Today and Tomorrow.' Mr. Wakeford pointed out (*Journal*, June 21, p. 857) that, assuming the very modest annual increase in gas demand of 2% and no change in the present gas-making methods and policy, the present annual coal requirement of the gas industry of 24½ mill. tons would increase to 31 mill. by 1959 and to 37½ mill. 10 years later. And he expressed the gravest doubt whether that additional quantity of gas coal—over 50% increase on present requirements—could possibly be provided. Certainly there is nothing in the present position and apparent future tendencies of the coal industry to dispel that grave doubt.

Two propositions emerge: first, that we must make, whether in the one process or in the combination of two, more and more gas per ton of coal available to the industry; second, that we cannot afford to use in the manufacturing process any at all of the coal gas made. True the coke—the residual coke—must be sold as advantageously as possible, but, viewed from the standpoint of coal economy in the delivery of useful therms at the point of utilisation, the coke therm can never be as valuable, as controllable, as of equal all-round efficiency as the gas therm. The use of the coke oven in Great Britain, outside its true role in the production of hard coke for metallurgical and some other industrial purposes, would not be a step in this direction. This is not so say anything against the fullest use in the gas industry of surplus coke oven gas wherever it is available—a practice which, however, is well established and has come to stay. Finally, there remain the long-term problems of what to do to meet the approaching shortage in true gas-making coals. The solutions for us will probably not be the same as those in France. We may leave them for the present in the capable hands of the Director of Gas Research.

PENSION FUND AND HOUSE PURCHASE

HOUSE purchase loans on the security of the freehold of hou[se] plus life assurance policies are to be made available t[o] employees under a new scheme announced by the Eastern Gas Board and detailed in the latest issue of the Cambridge Division *Bulletin*. The scheme makes it possible for any employee over 21 to borrow up to 90% of the value of the house he proposes to purchase for his own occupation and is based on permission granted to trustees of pension funds of undertakings vested in the board to invest surplus funds in loans to employees. Borrowers have the option of two slightly different schemes, both of which limit the loan to 90% of the surveyor's valuation of the premises, stipulate that the loan shall be backed by insurance, and provide for the loan to cover a period of 15, 20, or 25 years, or to end on the date on which the borrower attains pensionable age. The present rate of interest is 3½% per annum. In both schemes the borrower pays all costs and charges in connection with the acquisition of the property and the creation of the mortgage and the pension fund derives an assured income.

SEVERANCE COMPENSATION

SECTION 29 of the Gas Act, 1948, provides for the payment to local authorities whose gas undertakings were transferred to area boards a global sum of £2.5 mill. by way of compensation for the severance of those undertakings, covering such matters as overhead charges, central establishment charges and the costs of the accounting department and its staff, and of the engineering and legal departments. The overall sum was arrived at as proportionate to the £5 mill, granted to electricity departments under the Electricity Act, 1947, the gas revenues of local authority undertakings having run at about 40% of the electricity revenues over a given period of years. The Minister of Fuel and Power has now issued as Statutory Instrument No. 1277 (1950), the Gas (Severance Compensation) Regulations, 1950, which prescribe the conditions for participation and the principles and method for dividing the sum among the authorities concerned. Chief weight in fixing the amounts which authorities are to receive is given to numbers of consumers, but a proportion (about 25%) of the total compensation is allocated by reference to the volume of gas made and sold, excluding bulk sales. The particulars to be used in determining the amounts payable are those in the 'Return relating to Gas Undertakings in Great Britain for the year 1947,' compiled by the Ministry of Fuel and Power and published by H.M. Stationery Office. The regulations were laid before Parliament on July 28 and came into operation on August 3.

Letters to the Editor

SERVICE TO THE CONSUMER

DEAR SIR,—In your issue of June 28 you were kind enough to publish a letter in which I 'trailed my coat' by way of questions to draw contributions from readers in terms of principle and policy. The reference that Mr. Burch has made to this in your issue of August 2 leads me to put down some propositions—admittedly controversial—in the hope that constructive correspondence and action may ensue.

(1) Gas appliances need to be maintained regularly:—

(a) Like other apparatus and machinery, to keep on giving the best service at the lowest cost.

(b) To avoid risks to health and life of users.

(c) To cut replacement costs and give long appliance life.

(d) To correct any ill effects of earlier imperfect handling or of any changes in gas supply or other conditions.

(2) The consumer pays, either:—

(a) Directly, (i) per visit, or (ii) by contract; or

(b) as part of the appliance and/or installation price; or

(c) in the price of gas, as part of a tariff or otherwise; or

(d) by two or more of the foregoing, preferably to some plan.

(3) It is in the interests of the gas board that:—

(a) Costs be recovered at minimum charge to the consumer.

(b) By all fair means there should be adequate inducement for the consumer to buy the appliance from, and to have it installed, regulated, and regularly serviced by, the board or its agents.

(c) Conversely, that gas appliances should not be installed without the knowledge of the board, nor should unqualified persons install or regulate or service gas appliances.

(d) Over-age appliances should be written off to a clearly defined scheme, and there should be adequate incentive to fit new and up-to-date ones at fair prices.

(4) Service has been truly studied by very few. Run-away costs and wild statements that the cost of service is very high are common. A few of the factors affecting cost that need constant and careful attention are:—

(a) Organisation to a simple but carefully prepared plan (see, for example, 'District Work Planning,' by H. R. Hart, 1947, London and Southern Junior Gas Association) with proper administration, true evaluation of results and full use made of them. Unless one starts with right principles applied with right methods to right conclusions followed by right development, any kind of work will be too costly.

(b) Given (a), the more universal the service, the less is the travelling time and the lower the cost per appliance. Some contractors may be unable to quote an economic figure because of dispersion in time and place.

(c) Service calls attributable to specification (wrong appliance for the job), or to installation, or to regulation, or to earlier maintenance, multiply service costs with a snowball effect. If they are charged against the sections or individuals responsible, rapid improvement in service will be combined with striking reductions in costs. Service attributable to design or to material or to manufacture should be charged where it is due and should not be borne by consumer or by board.

(d) Over-maintenance (too much per visit, or too many visits) puts up costs directly and may shorten the life of the appliance. Far too much trouble and expense is caused by unnecessary dismantling and unnecessary replacements and by enthusiasm without knowledge.

(e) Frequently repeated visits by fitters and inspectors to the same installation for the same complaint are far too common. By bad installation or by ignorance of some basic principle costs are multiplied without giving any real service to the consumer.

(f) Training and supervision, of the right kind, are vital. It should not be possible for anyone to write, 'Escapes of gas, poor supplies, diminished pilots, choked water filters, etc., are all defects which can arise within a week or two of attention being given to an appliance or installation.' Or to conceive of a 'visit of a host of mechanics from the fitter-inspector downwards every six months or so.'

(g) It may seem that labour is difficult to obtain, or that labour policies and wage structures present insuperable obstacles to progress. This cannot be urged as a plea for inaction but rather the reverse. Side by side with the formation of a service policy must be action to implement it—action on all fronts, local, regional, and national, using to the best advantage all weapons—fact and propaganda, example and diplomacy, proof of general advantage on a small scale wherever it cannot be provided quickly enough on a big scale. For sound service, the plan must be sound in principle and in detail and the manpower must be there and must be adequately trained and paid and used. The longer this takes, the stronger the reason to establish basic principles now and to act early and progressively.

If service to the consumer is only one of many things which gas boards have to tackle now, it is nevertheless a vital one. It directly affects the whole appliance sales policy, fitting policy, and can have not inconsiderable bearing on gas production, distribution, and sales. Cannot a lead be given and principles be established on which boards and undertakings will base detailed application? Many principles are common to all districts. Should they not be defined for action now?

Yours faithfully,
T. B. V. HIRST.

9A, Cheviot Court,
Luxborough Street,
London, W,1.

August 16, 1950.

ODIOUS COMPARISON

DEAR SIR,—I have before me a statement of comparative running costs for gas and electricity which was recently submitted to an architect by the Electrical Development Association. The statement concerns the relative running costs of gas and electrical equipment put forward for a bungalow in the southern part of England, and it reads as follows:

ELECTRICITY AND GAS COST COMPARISON

Electricity at ¾d. per unit; gas at 1s. 3½d. per therm

TYPE	DUTY	CONSUMPTION	COST
Electric	Boiling three pints water	0.19 units	0.142d.
Gas	Boiling three pints water	0.0125 therms	0.225d.
	Excess cost of gas over electricity 0.083d. (58%)		
	COOKER		
Electric	Cooking for three persons per week	21.5 units	16.1d.
Gas	Cooking for three persons per week	1.25 therms	22.5d.
	Excess cost of gas over electricity 6.4d. (40%)		
Electric	Seven persons per week	40.6 units	30.4d.
Gas	Seven persons per week	2.26 therms	40.7d.
	Excess cost of gas over electricity 10.3d. (34%)		
	REFRIGERATOR		
Compressor, electric	One week	6.5 units	4.88d.
Gas	One week	1.25 therms	22.50d.
	Excess cost of gas over electricity 17.2d. (361%)		
	WATER HEATER		
Electric	10 gal. from 50° to 150°	3.25 units	2.44d.
Gas	10 gal. from 50° to 150°	0.167 therms	3.0d.
	Excess cost of gas over electricity 0.56d. (23%)		

All the figures quoted are derived from a seven-day test made by the Good Housekeeping Institute at the request of the gas and electricity boards. Gas consumption quoted from *Gas Service Pocket Book*, 1950, page 124.

For cooking, water heating, and refrigeration, gas will be more expensive than electr city. In these examples no mention of the extra cost to gas has been made for the cost of cleaning, decorating, maintenance (twice yearly with gas water heater), flues, and matches.

Regarding the foregoing E.D.A. statement, I should like to make a few observations.

It will be seen at once that, though the prices stated are electricity ¾d. per unit and gas 1s. 3½d. per therm, the calculations in the statement are based on electricity at ¼d. a unit and gas at 1s. 6d. a therm. This is irresponsible and misleading, and in my opinion constitutes a major misrepresentation.

In the second place, no account is taken of any standing charge additional to the cost of the unit (stated at ¾d., but calculated at ¼d.). Any standing charge for electricity would, of course, entirely alter the picture.

Thirdly, what exactly is this 'seven-day test made by the Good Housekeeping Institute at the request of the gas and

electricity boards?' Does it refer to some test covering the whole of the equipment quoted? Also it will be noted that the types of equipment for which figures are given are not specified.

It is easy enough to re-calculate the figures on the basis of electricity at ¾d. a unit and gas at 1s. 3½d. a therm, but such re-calculation does not cover the basic points which I put forward; and to my mind the comparison of the E.D.A. is further invalidated by assuming very high efficiencies in use for electrical equipment and sub-normal efficiencies for gas appliances. As a specific instance, to suggest that gas is over three-and-a-half times as expensive as electricity seems to me quite extraordinary.

To sum up, and in general, I regard the comparative statement of the Electrical Development Association as so misleading and unfair as to warrant not only publication in your columns but challenge by the gas industry.

Yours faithfully,
ONLOOKER.

August 2, 1950.

Personal

Mr. **Tom Osborne** (77), who has been employed by the Pontypool undertaking for 50 years, was guest of honour on July 8 at a social arranged by the staff and was presented with a gold watch. The Company was incorporated in 1873, the year of Mr. Osborne's birth, and he was appointed a collector in 1899, the only one at that time. The presentation was attended by about 50, including Mr. T. Mervyn Jones (Chairman of Wales Gas Board), Mr. Herbert Smith (Director, Pontypool Water Company), and Mr. J. Powdrill (General Manager), who presented the watch. Mr. Powdrill described Mr. Osborne as a man who seemed to have solved the problem of perpetual youth, and thought the gesture by the staff was the most kindly and spontaneous one they had ever made. The watch would be a constant reminder of his friends and colleagues. Mr. Osborne, responding, gave a resumé of the progress of the undertaking during his years of service and said he deeply appreciated the presentation.

Mr. Osborne (left) receiving the presentation from Mr. J. Powdrill.

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Mr. **J. C. Hogg**, of Stretford, has been appointed General Manager of the Bournemouth undertaking of the Western Division of the Southern Gas Board. He will take up his new duties on September 1.

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Miss **Lilian Buckland**, Secretary of the Industrial Gas Information Bureau at Gas Industry House, is leaving to marry Mr. Denis Nash, a Civil Engineer. She joined the British Commercial Gas Association in May, 1939, was appointed Assistant Secretary of the Industrial Gas Information Bureau in July, 1943, and was promoted to Secretary of the Bureau in July, 1946. Before leaving Gas Industry House she was presented by Mr. F. G. Brewer, Secretary of the Gas Council, on behalf of all her colleagues, with a vellum covered blotter containing the signatures of her friends, together with a cheque. Warm tribute to her work was paid by Mr. Brewer. The wedding will take place at Holy Trinity Church, Northwood, on September 18.

Mr. **H. E. Stone** has retired from the Management of the Hong Kong and China Gas Company and the Colombo Gas and Water Company and has been appointed a Director of both Companies. He was appointed General Manager and Engineer of the former undertaking in 1930, and in 1937 became General Manager of both Companies. Educated at Birmingham, Mr. Stone gained his early gas engineering training and experience with the former Birmingham Gas Department, becoming resident engineer at Nechells works in 1911. Later he went to Birkenhead, first as Deputy and later, on the resignation of Mr. R. H. Brown, as Engineer. While at Birmingham he was Treasurer of the Midland Junior Gas Association, and in 1925 he was President of the Manchester and District Junior Gas Association.

Obituary

The death has occurred, in his 67th year, of Mr. **G. W. Allott**, until his retirement for many years on the staff of Newton Chambers & Co., Ltd. He entered the drawing office of the firm in 1900 and retired in 1949, being then General Sales Manager of the Heavy Constructional Division. In the course of a long career he represented the Company abroad on a number of occasions. He took an active and highly useful interest in various trade associations in the foundry and constructional engineering industries, notably the Ironfounders' National Federation, the British Chemical Plant Manufacturers' Association, the Gasholder Section of the Society of British Gas Industries, the British Chemical Engineering Association, the Gas Plant Association, the National Light Castings Ironfounders' Federation, and the Tank and Industrial Plant Association. He was deeply versed in the problems of these bodies, and had held high office in several of them.

Diary

Aug. 28.—West Midlands Gas Consultative Council: Meeting, Queen's Hotel, Birmingham, 2.30 p.m.

Aug. 28.—West Midlands Gas Consultative Council: Gas Offices, Edmund Street, Birmingham, 2.30 p.m.

Aug. 29-Sept. 9.—British Food Fair, Olympia.—(Gas Council Stand No. 28, Grand Hall.)

Sept. 5.—East Midlands Gas Consultative Council, Guildhall, Nottingham, 2.30 p.m.

Sept. 5.—Irish Gas Association: Annual Meeting, Municipal Technical Institute, Limerick, 10 a.m. Presidential Address of F. K. Thomas. Paper by W. Boden, 'Cast Iron Gas Mains,' Annual Dinner, Cruise's Royal Hotel, Limerick, 8 p.m.

Sept. 8.—Northern Junior Gas Association: 'Distribution,' G. Haddon (Stockton), at Stockton.

Sept. 11.—Women's Gas Council: Executive Committee, at Gas Industry House, S.W.1, 1 p.m.

Sept. 16.—Eastern Junior Gas Association: Presidential Meeting and Ladies' Day, Great Grimsby. Meeting and Presidential Address of G. Davies (for members) at Demonstration Theatre, Gas Showrooms, and coach tour to Cleethorpes (for ladies), 11 a.m.; luncheon, Yarborough Hotel, 12.30 p.m.; coach tour, 2.45 p.m., returning to Winter Gardens for tea at 5 p.m.

Sept. 18-22.—Association of Public Lighting Engineers: Annual Meeting and Conference, Bournemouth.

Sept. 20.—Southern Gas Consultative Council: Reading, 2.30 p.m.

Sept. 21.—North British Association of Gas Managers: Annual General Meeting, Oban. 'Group Working,' N. C. Sturrock (York-Harrogate Group, North Eastern Gas Board; 'The Use of Town Gas in a Dental Workshop, with special reference to heat treatment of Acrylic Resin,' W. Kirk (Motherwell and Wishaw); 'Sales and Development,' Part 1, R. Cowie (Hawick); Part 2, T. Gordon Bennett (Edinburgh and South East Division). (Golf and bowling competitions on Sept. 20; steamer excursion on Sept. 22).

Sept. 22.—Northern Junior Gas Association: Visit to West's Gas Improvement Co., Ltd.

Gas Development Schemes for Scotland

Press to Attend Future Consultative Council Meetings

THE Scottish Gas Board is to spend more than £1 mill. on various projects —mostly mains extensions—throughout the country. All of these schemes have been approved and can be proceeded with immediately, although the present shortage of certain materials may hold up some. This was explained at Edinburgh on August 9 following a meeting of the Scottish Gas Consultative Council by Councillor A. T. Morrison (Aberdeen), at the first Press conference given by the council. Although meetings of the council have been held regularly every three months since August last year, the Chairman said it did not seem advisable to admit the Press to the early meetings. In future, however, all meetings will be open to the Press, he added. The council has set up district committees as follows: No. 1, Edinburgh and South-East; No. 2 Central (based at Dundee); No. 3, Aberdeen and North; No. 4, Glasgow and West; and No. 5, South-West Scotland (based at Kilmarnock or Ayr).

'With nothing done in Scotland's gas works during the war years,' declared Councillor Morrison, 'the gas board is now faced with a huge scheme of developments. Scotland is now consuming 50% more gas than in pre-war years and gas is being used more and more for cooking. There are 194 installations in Scotland and each is being kept on its own feet. Projects costing a total of £1,125,915, approved by the Scottish Board, were outlined, the main items being as follows:

Improvements at Granton

EDINBURGH GROUP.

Dalkeith District.—New 250,000 cu.ft. gasholder in Arniston-Gorebridge area.

Edinburgh District.—Replacement of two old exhausters at Granton by three Connersville exhausters each with capacity of 11.2 mill. cu.ft. per day. One of the exhausters to be replaced, after reconditioning, will in turn replace another old machine in poor condition. Installation of tar separating and effluent recirculating system to replace existing inadequate tar separators. Extension of vertical retorts by addition of 28 retorts (82 in.) with mechanical producers; to provide for estimated increase in output from Edinburgh undertaking having regard to five years' delay in delivery of material.

SOUTH EAST DIVISION.

Armadale/Bathgate District.—Laying 8 in. h.p. main, in connection with integration of undertaking; installing governor and meter.

Galashiels/Melrose District.—Laying mains from Galashiels to Melrose and St. Boswells to provide bulk supply from Galashiels.

Bo'ness District.—Laying mains and services for Scottish Special Housing Association third miners' housing programme (220 houses).

Innerleithen District.—Laying mains and services to Pirns housing site (96 houses).

PERTH GROUP.

Alloa District.—Replacement of inadequate feeder main to Tullibody, Menstrie and Alva and feeder main to Alloa West. Mains extension to Delph Wood (Tullibody) housing scheme (228 houses), mains extension to Public Park site, New Sauchie (104 houses).

Stirling District.—Mains to Coxethill housing scheme first development (74 houses), including part of main for future development.

Aberfeldy District.—Extension of gas-making plant by one bench of eight retorts.

Perth District.—Foundations and brick panelling of steel framed building for C.W.G. plant, weigh-house, official testing, room, and extension of offices, overhead coke storage bunker and coke handling plant for water gas plant.

DUNDEE GROUP.

Dundee District.—Laying mains in connection with developments at St. Mary's housing scheme (292 houses), mains to supply new factory premises at Scottish industrial estate.

Melrose District.—Resetting four retorts and re-lining one producer.

FIFE GROUP.

Buckhaven & Leven District.—Mains to Cemetery Road housing site.

Burntisland District.—Mains to Grange housing site.

Aberdeen Housing

NORTHERN DIVISION.

Aberdeen District.—Mains to Northfield housing site (1,750 houses with provision for industrial area).

Banff District.—Main in Castle Street and High Street to augment low pressure distribution system.

Lerwick District.—Mains to new housing area. New carbonising and ancillary plant is necessary if continued fall in gas output is to be checked but the expenditure (possibly £40,000) is not felt to be justified until it can be shown that gas sales can be materially increased.

Wick District.—Installation of two beds of eight retorts with house capable of extension of carbonising plant.

GLASGOW DIVISION.

Helensburgh/Dumbarton District.—Interconnecting mains to serve proposed 6 mill. cu.ft. per day gas plant.

Glasgow District.—Mains to service 244 houses at Milton housing scheme, including main to meet the needs in due course of 660 houses, plus schools, churches and a community centre, mains to service 356 houses at Toryglen housing scheme and 608 houses at Carnhill housing scheme. Reconstruction and extension of wet and dry purification plant at Dawsholm works (approved in principle pre-vesting by Glasgow Corporation and Ministry of Fuel & Power as part of report on potential demand for gas, 1948).

LANARKSHIRE GROUP.

Hamilton District.—Mains to service Quarter Road housing scheme (88 houses).

Lanark County District.—Mains to service Tannochside housing scheme, Uddingston (140 houses).

Motherwell & Wishaw District.—Mains to service Cambusnethan housing scheme (122 houses).

RENFREWSHIRE GROUP.

Johnstone/Kilbirnie District.—Main as part of high pressure network for bulk supply from Johnstone to Kilbirnie. Duplication of main between the Beith/Lochwinnoch roadhead and Neilston of Barr, if found necessary. (Kilbirnie works is scheduled for closure, when production will be centred at Johnstone works.)

Stewarton/Dunlop District.—Mains to link up Stewarton and Dunlop district.

Barrhead District.—Main to service Auchenbach housing scheme (294 houses).

Johnstone District.—Mains for Elderslie housing scheme (114 houses).

Neilston District.—Mains for Neilston housing scheme (46 houses).

Beith District.—Erection of showroom and offices.

GREENOCK GROUP.

Greenock District.—Replacing by a 6 in. h.p. main, existing 3 h.p. main (in poor condition) in Sugarhouse Lane to Roxburgh Street in which area pressure is now deficient. Re-setting eight retorts including installation of complete new ironwork to bring setting into line with modern practice.

KILMARNOCK GROUP.

Muirkirk District.—Laying 1,395 yd. of main to Smallburn housing scheme (220 houses).

Kilmarnock District.—Replacement of outworn ancillary plant.

Cumnock District.—Fitting six retorts into setting, dismantled for reconstruction, and increasing production depth.

Newton-on-Ayr District.—Purchase of site for erection of gasholder.

Coal Science

We have received from Butterworths Scientific Publications a new book edited by Dr. D. H. Bangham, Director of the Research Laboratories of the British Coal Utilisation Research Association, whose sudden death was recorded in the *Journal* of August 2 (p. 230) entitled *Progress in Coal Science*. (Price 40s.; by post, 1s. 3d. extra.) This volume, which is excellently printed and illustrated, consists for the most part of a selection of reviews prepared for the *Monthly Bulletin* of B.C.U.R.A., published in revised form by authority of the Council of the Association. The choice should appeal to students reading fuel technology either for a first degree or as a post-graduate study, and not only to students but to all interested in fuel technology who wish to keep up-to-date in their knowledge about coal and its uses.

Gas at Royal Welsh Show

THE first occasion on which the gas industry has been represented at the premier agricultural show in Wales was at this year's Royal Welsh Show, at Abergele, when the Wales Gas Board staged an interesting and attractive exhibit. The main building was strikingly decorated in attractive shades of cream and green and was paved throughout.

At the entrance Glevum incubators and an Ascot chick rearer were displayed, the latter containing a supply of day old chicks which was a continual source of interest and attracted many people to the stand. This entrance display also included an attractive range of cookers.

A central display panel, incorporating an enlarged reproduction of the board's crest, showed the range of special cookers which have been adopted by the Wales Gas Board for long term hire purchase. This was supported by alcoves displaying domestic equipment, including radiators, fires, wash boilers and washing machines, hot water appliances, refrigerators, together with small appliances.

The requirements of the farm were covered by a coke section in which a model of the I.C.I. Mark 3 grass dryer was shown, together with displays giving information on greenhouse heating, soil warming, and general water heating. The dairy section included a Stott's bottle steriliser, a Brockhouse steam boiler and Guisti ice-cream pasteuriser, together with Potterton hot water units.

A selection of enamelled catering equipment was on view illustrating the wide application of gas to meet the needs of the cafés, restaurants, boarding houses and hotels of seaside resorts, as well as meeting the catering requirements of school canteens and hospitals. A prominent feature in the main building was the by-product display panel illustrating the many uses in everyday life.

A novel feature was the inclusion of the mobile showroom which has been designed for use by undertakings within the board's area. Cookery demonstrations were carried out in the showroom during the three days of the show.

Home Service Advisers were busy supplying information and explaining the necessary procedure to produce the excellent results shown by the display of bottled fruits.

Councillors and chief officials of the local and county authorities were invited to visit the stand on successive days and were entertained at tea. The hosts on the first day were Mr. O. P. Cronshaw and Mr. H. Blythe, Chairmen of the Rhyl and Colwyn Bay Group Committees. Mr. J. Lloyd and Mr. H. Maycock, Chairmen of the Wrexham and Holywell & Flint Group Committees, acted as hosts on the second day, and on the final day Mr. A. Ifan Jones and Mr. J. Wood, Chairmen of the Anglesey and Caernarvonshire Group Committees, were the hosts.

The mobile unit was the outstanding feature of the Wales Gas Board's display at the Royal Welsh Show. The exterior view shows the extended verandah; on the right is the interior, in which the cooking demonstrations were staged.

Sir Edgar Sylvester Broadcasts

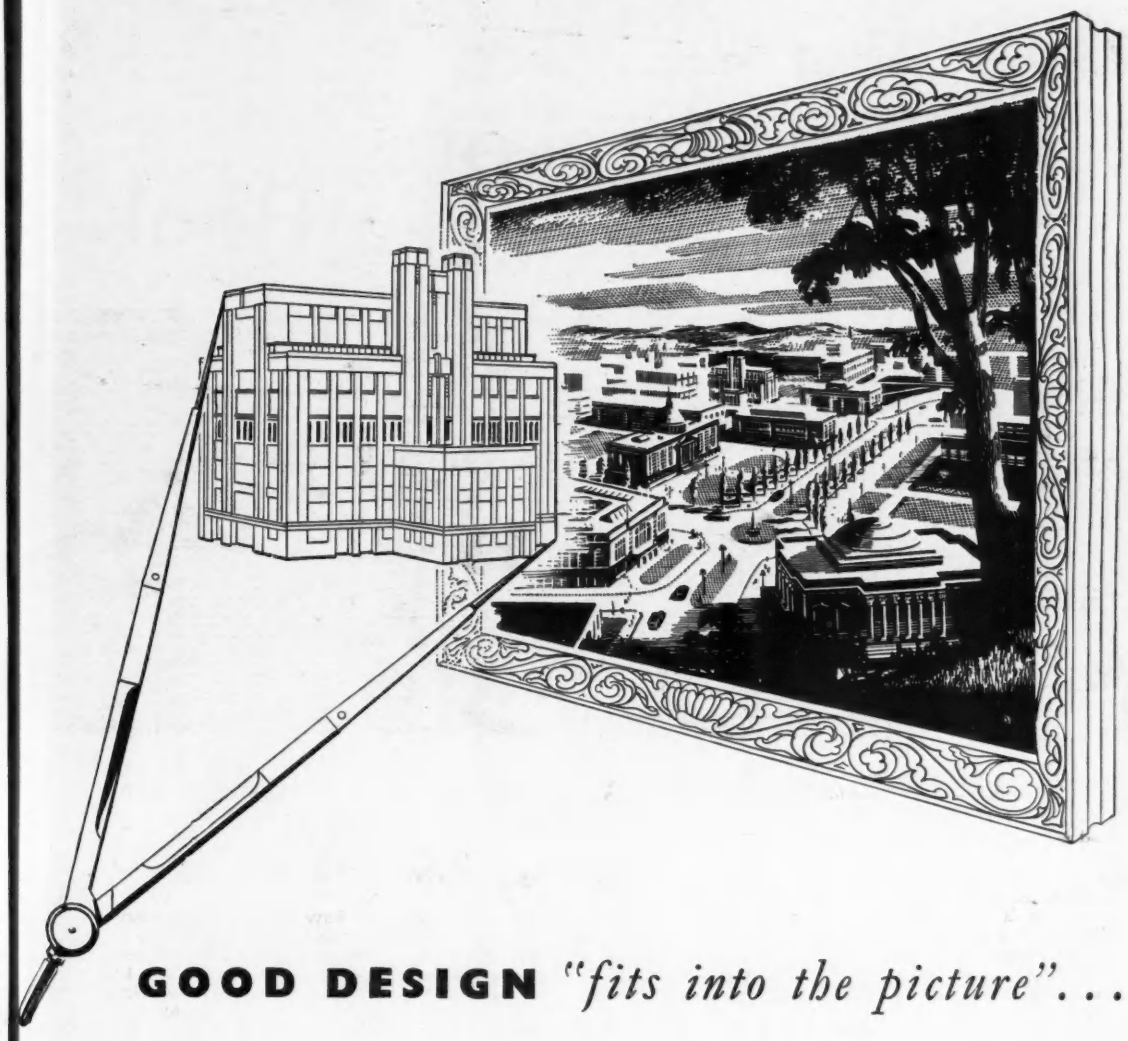
In a three-minute broadcast in 'News from Wales' on the Welsh Region radio at the conclusion of his tour of Wales, Sir Edgar Sylvester, Chairman of the Gas Council, said :—

'The gas industry in Wales, as in Scotland, is one unit and is, I think, the first industry or public service in which the principality is treated as one undivided whole. In England there are 10 other area boards and the chairmen of all 12 form the Gas Council. Each is completely responsible for administering its own affairs, and as you know Mr. Mervyn Jones is your Chairman.

'I wonder how many of you know who are the members of your Wales Gas Board? I think they are doing their job well and you should be proud of them. It is, I can assure you, a well balanced board, containing experts in engineering, finance, industrial relations, and business generally. It also represents a wide range of Welsh interests and covers both north and south. In Bangor I heard one of the members described as the uncrowned King of North Wales—that, of course, referred to Sir William Jones, of Ruthin. Another of them certainly is a sporting king of Wales; indeed, he built up a cricket team that triumphed over all England to the delight of all cricket lovers; I mean, of course, Johnny Clay, the Glamorgan cricketer. He is now bowling from the gasworks end. I wish I had time to tell you about the other members of the board, but time does not permit.

'I have seen the headquarters of the board at work. I have seen a grid main being laid over mountains and when the Land Rover got into trouble I was nearly laid there myself. But, above all, I have met in some of your towns, large and small, the persons whom your Wales Gas Board so rightly regard as the most important of all, the key men, in this great service, the local gas manager—"Jones the Gas," that's the man. Your board have complete faith in him and the group committees of which he is a member. I hope you consumers will give him your confidence too. "Jones the Gas" is not there to make any profit; but equally not to make a loss. He is there to provide all of you with the best possible gas service. This week I have seen in many cases what a boon that can be to Wales. The service is run for you, the people. And then, of course, there is a consultative council to represent you. The Chairman of this council is Alderman George Hamer, of Llanidloes. Recently, as you know to the great pleasure of his many friends, he has been appointed Lord Lieutenant of the County of Montgomery.'

Over 500 Gas Cookers were ordered on August 1 at the Dundee showrooms of the Scottish Gas Board. It was the first day of the reintroduction of the hire-purchase system for gas appliances. Payments cover a period of three years, and it is hoped to make delivery within five or six weeks of ordering.



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There would be less value in high thermal efficiency without human efficiency too — and in this question of the smooth functioning of the human machine, environment plays a definite part. Hence our study of the architectural problems which a gasworks and its site involve — and hence an altogether improved architecture that means not only more light and air within, but a plant that fits really happily into, and takes a proud place in, any surroundings.

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SALES of Radiation Cookery Book NOW TOP 2 MILLION

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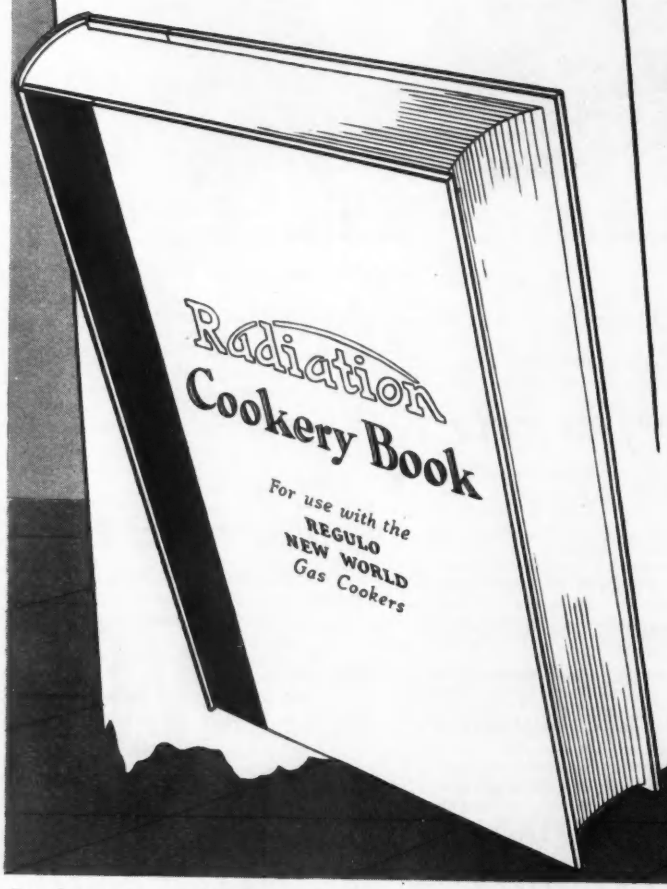

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NEW WORLD NEW WORLD NEW WORLD

The sales of the Radiation Cookery Book keep pace steadily with the sales of New World Gas Cookers. Now, more than two million housewives using this perfect cooking combination are saying, with growing enthusiasm — "It's a NEW WORLD for me!" The 37th edition of the Radiation Cookery Book is ready — price 3/- (Retail 4/-) carriage paid — and may be obtained from Radiation Publications Department 7 & 8, Stratford Place, London, W.1.

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Here is the NEW WORLD No. 1640 in all-cream finish with folding platerack and covertop, four burner hot-plate with vitreous enamelled burners REGULO Oven Heat control and the NEW WORLD No. 50A Gas Match

Showrooms & London Offices: 7 & 8 Stratford Place, W.1

NEW WORLD NEW WORLD NEW WORLD

Background to PROGRESS

Elland has a history which extends to before the Norman Conquest, and it is interesting to note that in A.D. 1317, Edward II granted a Charter to Sir John de Eland, which gave him the right to hold "A Market and two Fairs " in the town. Elland Hall, illustrated above, with its unusual rose window, is a good example of early 17th Century West Riding Architecture.

Whilst Rose Mount Iron Works cannot claim an origin as remote as the town in which it now occupies the leading industrial place, it can modestly point to a steady growth extending for nearly a century. rom F1855, when Rose Mount Iron Works came into being, Dempsters of Elland have steadily built a tradition for sound construction and technical excellence in Gas Works Plant, with an extensive range, comprising:—

Gasholders (Spiral and Waterless M.A.N. types); Purifiers (Cast iron, welded steel or Tower type); Condensing Plant and Static Washers, Horizontal and Continuous Vertical Carbonising Plants, and Mechanical Handling Plant for Coal, Coke and Oxide.

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British Association

In connection with the Birmingham meeting of the British Association for the Advancement of Science (August 30 to September 6) an exhibition entitled 'Energy in the Service of Man' opened at the Birmingham University on August 21 and will continue until August 29 and will be open again from September 7 to 9. Linked with the exhibition is a series of lectures at the Midland Institute, Paradise Street.

On August 25, at 6 p.m., Professor F. H. Garner, O.B.E., Director of the Chemical Engineering Department, Birmingham University, will deal with 'Gaseous Fuels and Their Significance for the Future,' and on September 5 at the same hour Professor Sir Alfred Egerton, F.R.S., of the Imperial College of Science and Technology, will lecture on 'Energy and Civilisation.' Admission is free.

Women's Gas Council

During the fifth congress of the International Federation of Business and Professional Women the Women's Gas Council held a reception at Gas Industry House for some of the delegates. The guests were received by Miss Halpin, President, Lady Nunburnholme, Past President, and Miss Ellington Wright, Chairman.

Among the guests were Miss Sally Butler, U.S.A., President of the International Federation of Business and Professional Women, and Miss Joyce Marsh, Vice-President of the British Federation of Business and Professional Women.

In reply to the address of welcome by Miss Halpin, who gave a summary of the work of the Women's Gas Council, Miss Butler expressed her appreciation of the warmth and graciousness shown to delegates from all parts of the world by the Londoner—from the man in the street to the members of such organisations as the Women's Gas Council.

Stockton's New Holder

Complaints that the Northern Gas Board appeared to have by-passed the Town Council in seeking sanction to build a gasholder 160 ft. high were made at a meeting of Stockton-on-Tees Town Council. The Chairman of the Council's Town Planning Committee (Councillor Milne) said that despite the Council's strenuous protests, this 'monstrous' gasholder might still be built in the centre of the town.

The Council's representatives had left a recent meeting with the Ministry of Fuel and Power believing that they had failed to persuade the board to get an alternative site. The gas board had stated that if a new site was obtained it might cost another £30,000 for piling work.

The Mayor (Alderman Kelly) commented that the proposed holder would be next door to a school. Councillor Slater stated that the board's action in applying direct to the Ministry for sanction to build the holder was one of the disadvantages of nationalisation.

Gas Cooks for 100,000

More than 100,000 Welsh men and women attended the National Eisteddfod at Caerphilly. They came from all parts of the world to share in this great national festival, and special arrangements were necessary to house and feed the influx of visitors.

The Wales Gas Board was prominent in these special arrangements. All the cooking at the Eisteddfod was done by gas, and the official caterers had been provided on loan by the board with all the necessary appliances—three double oven ranges (R. & A. Main, Ltd.), three pedestal boiling pans (R. & A. Main, Ltd.) and nine Radiation boilers. In addition, the board provided two Potterton hot water storage sets, two Ranalah drying cabinets, and four Dean boilers.

Many hotels and cafés in the town installed extra gas-fired equipment in view of the increased demand for meals and accommodation, and the board also supplied equipment for public buildings which had been converted into temporary dormitories to cope with the enormous number of visitors. A notice, 'The Catering in this Establishment is carried out by Gas,' was displayed in all establishments where appliances had been installed.

A special display was arranged in the local gas showrooms in connection with the Festival, and a mammoth Welsh flag adorned the top of the gasholder, visible from the Eisteddfod pavilion.

Mr. Therm Takes the Air.—Bearing an advertising slogan, 'Mr. Therm Flies to Serve You,' 1,200 hydrogen-filled toy balloons were released during the Bank Holiday week-end from Southall and Mill Hill. Finders were invited to return labels (attached to the balloons) to Mr. Therm at Kensington, small rewards being offered to senders and finders. In the first four days 120 labels were received, one from as far as the Firth of Forth.

ASCOT IN THE STATES

An important and noteworthy step forward has been made, through the energy and drive of Ascot Gas Water Heaters, Ltd., in the gas industry's export market to the United States of America. The outcome of three years intensive work, Ascot have been awarded by the American Gas Association the Association's Certificate of Approval for their No. 701 multipoint instantaneous water heater. The A.G.A. Certificate of Approval is an essential to the sale of gas appliances in America. After a six months' tour of the U.S., Mr. James Perks (Midlands Manager of Ascot's) returned to England with the award, which sets the seal on earlier work, starting in 1947, of Mr. George Rosam (Export Manager) and Mr. John Franklin (Home Sales Manager).

Study of conditions in the States at first hand brought out two salient factors. The first was that the obvious immediate market was for water heaters using bottled gas, of which there are 5 mill. consumers in America. The second factor which emerged was that without the American Gas Association's approval of the product any sales attempt in the U.S.A. would be abortive and—to say the least—difficult in Canada. And the fact had to be faced that A.G.A. had never given approval to products other than those of North American manufacturers. One of the functions of A.G.A. is, of course, to establish standards of quality and safety, to encourage research, and to advise both manufacturers and distributors.

On their return to England from their visit to the States, Mr. Rosam and Mr. Franklin's experience and investigation led to the briefing of Ascot's technicians in the production of instantaneous water heaters for the American market, the aim being to gain A.G.A. approval. The market is wide and worthwhile. In 1948, 2 mill. American-made gas storage heaters were sold in the States, compared with only 8,000 instantaneous heaters. The A.G.A. award is a matter for particular congratulation to Ascot; it is also of general prestige value to the gas industry generally.

Mr. E. J. Perks (right), Midlands Manager, Ascot Gas Water Heaters, Ltd., handing the American Gas Association's Certificate of Approval to the Company's Overseas Manager, Mr. G. H. Rosam.

We may add that Ascot gas water heaters have already gained the approval of the Argentine State Department. They have also been accepted by the National Gas Association of Australia, Gastichning of Holland, Dansk Gas Bureau of Denmark, the Shell Company of England, and the Standard Oil Laboratories of New Jersey, whose associates supply bottled gas throughout the world.

West Midlands Prices Up

Average of Twopence a Week

In August, 1949, the West Midlands Board announced that, having examined the budget estimates of the 71 undertakings, it had been found necessary to make increases in the price of gas in a number of districts for which the board is responsible. This state of affairs had arisen owing to the enhanced cost of coal, to the inherited deficiencies in the revenue budgets of some of the undertakings, and to other reasons.

The differential increases in gas prices then adopted proved to be just about sufficient to balance the revenue budgets having regard to the board's commitments at that time.

While the majority of the gasworks were found to be in good order, there were on the other hand undertakings where maintenance of the works was in a most unsatisfactory state and heavy expenditure would be required if the board was to fulfil its obligations. Even on some of the larger works, plant had been driven to extremity to meet the urgent demands of the war industries and repairs were put on one side owing to the difficulty of letting down carbonising plant for resetting. Some expenditure has already been incurred in dealing with the backlog of this repair work, but it will be a long time before complete recovery can be recorded.

The board has for some time past been concerned at the shortfall of coal. The output of gas is running at more than 3% above last year and unless there is an increase in the availability of coal the board will be obliged to manufacture still more water gas and use a correspondingly larger amount of oil. This, in turn, will upset the budget proposals, as water gas is more costly to manufacture than coal gas. Moreover, there will be less coke for winter consumption if this policy has to be adopted.

Solid Progress

At a Press conference on August 17, Mr. G. le B. Diamond, Chairman of the board, explained that although much remains to be done in order to obtain an improvement in gas supply and service to the consumer, nevertheless a great deal of solid progress had been achieved towards securing uniformity of practice and a higher degree of efficiency in operation. As an example, in one division the average yield of gas per ton of coal has been greatly improved, which has resulted in a saving of £60,000 per annum in the cost of coal.

Mr. Diamond went on to say that the board's coal department has been instrumental in obtaining better terms for the 3 mill. tons of coal purchased per annum, and this has brought about a saving of approximately £32,000 per annum. The improved internal working results and the economies in operation already obtained have, however, been heavily outweighed by further increased commitments, which are the result of outside circumstances over which the board has no control. Additional revenue of the order of £700,000 per annum will be required to match the added costs in a full year. The board is, therefore, increasing the price of gas, which will provide a sum sufficient to equate the income with outgoings.

The increases are as follows:—

In all districts where gas is sold on a thermal basis by ¼d. per therm, except Coventry, Dudley, Rugby, Shrewsbury, and Solihull, which will be subject to special increase, and Bridgnorth, Kidsgrove, and Stone where no increase will be made.

In all districts where gas is sold on a volumetric basis by 3d. per 1,000 cu.ft., except in the case of South Staffordshire Mond, where the increase will be 1¼d. per 1,000 cu.ft., and Church Stretton, Kington, Shipston-on-Stour, and Tenbury, where no increase will be made.

Owing to special factors and/or to the uneconomic prices at present prevailing in the undermentioned districts, the increases will be as follows:—

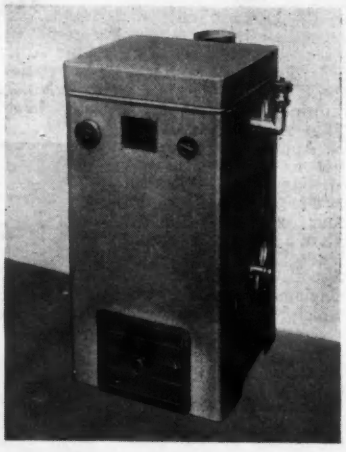
District previously supplied by.	Increase per therm. d.
Coventry Corporation	1½
Dudley, Brierley Hill, and District Gas Company	1
Rugby Gas Company	1
Shrewsbury Gas Light Company	1½
Solihull Gas Company	1½

The increases will apply as from the first meter readings on and after Aug. 28.

The average consumption for domestic consumers in the area in 1949 was 135 therms and, at this consumption, the general increase of ¼d. per therm will cost a consumer 8s. 4d. per annum, or 2d. per week extra.

KAYENCO GAS BOILERS

Of interest is the latest range of fully automatic gas fired central heating and domestic hot water supply boilers manufactured by Frederick Kay (Engineering),



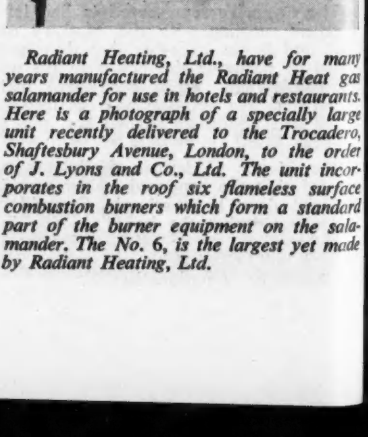
The Kayenco gas fired boiler, Model 49AA, rated at 60,000 B.Th.U. per hour.

Ltd., Chesham, Bucks. These boilers are of all steel electrically welded construction in accordance with British Standard specifications. They are compact, well-finished, and of pleasing appearance, and easy to keep clean. All models are supplied complete with fitted controls, thus reducing to a minimum the labour required to install. Design is such that maintenance is a very simple matter, the flueway being made accessible for cleaning by the removal of the top of the boiler without the necessity of breaking the main flue. Likewise the burner is easily removable from the front through the lighting door. A strong all-steel asbestos insulated jacket is easily removable to give access to the waterways clean-out covers without the undoing of any screws.

These boilers are being supplied to many gas undertakings throughout the country, and an interesting recent application is that of supplying hot water required for the communal laundries in L.C.C. flats.

We give the ratings of the various models:—

Model.	Rating.
49A	25,000 B.Th.U. hr.
49AA ...	60,000 B.Th.U. hr.
49B	151,000 B.Th.U. hr.
49C	210,000 B.Th.U. hr.
49-B2 ...	300,000 B.Th.U. hr.
49-C2 ...	400,000 B.Th.U. hr.



Radiant Heating, Ltd., have for many years manufactured the Radiant Heat gas salamander for use in hotels and restaurants. Here is a photograph of a specially large unit recently delivered to the Trocadero, Shaftesbury Avenue, London, to the order of J. Lyons and Co., Ltd. The unit incorporates in the roof six flameless surface combustion burners which form a standard part of the burner equipment on the salamander. The No. 6, is the largest yet made by Radiant Heating, Ltd.

KENT AGRICULTURAL SHOW

GAS was well represented at the Kent County Agricultural Society's Show recently held at Maidstone. The South Eastern Gas Board's stand (shown in the photograph above) had a 70 ft. frontage on each of the main avenues. The stand itself was similar to that used at the show last year, but was slightly enlarged and improved in appearance by the addition of the South Eastern Gas Board's new coat of arms. The floor consisted of purifier grids from the gasworks, which ensured that the stand was kept free from dust and mud. In order to compete with the gaudy paintwork of the agricultural machinery, the colour scheme of the stand, red on a cream background with cheerful posters and red flowers, was made as bright as possible. Visitors were encouraged to come on to the stand as a result of its being completely open along both sides. This is an important feature in the design of all exhibition stands.

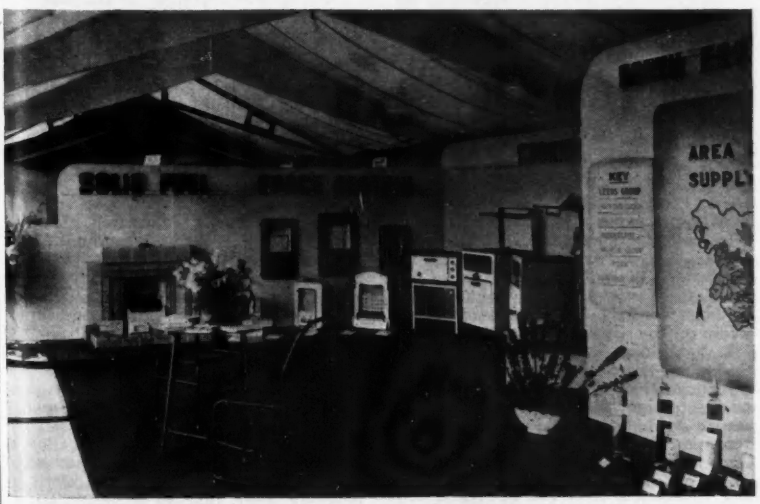
The large number of moving and working exhibits also attracted visitors on to the stand at Maidstone. These included a Miller-Hydro milk bottle washer fitted with a Potterton boiler, showing the circulation of hot water in a typical installation by means of air bubbles in liquid-filled glass tubes, a Maywick brooder complete with baby chickens, a Radiation 'Quiz' display, and the popular Ascot 'Magic Eye.'

Probably the most popular exhibit on any stand at the County Show was Mr. Therm's Puppet Show presented by Mr. and Mrs. Stavordale. The audience for each performance was only limited by the seating and standing accommodation available. A special script was written for the show emphasising the value to the farmer of the by-products from the manufacture of gas. The puppet characters included Mr. Therm, the farmer, his scarecrow, birds, a tramp and his dog, milk churns, bags of sulphate of ammonia, and two varieties of bean plants, the first crop being very feeble grown without and the second a magnificent crop grown with the help of sulphate of ammonia.

A special feature of the stand was a display of 'Metro' by-products. A model of a continuous tar distillation plant at present being erected at Tonbridge was loaned by the South-Eastern Tar Distillers in addition to a display showing the many products produced from the distillation of tar.

The stand was designed by Mr. R. C. Bergg, Showroom Manager of the Maidstone gas undertaking, and was manned by members of the staff of the Maidstone, Rochester, and Tunbridge Wells undertakings.

A 'still' from the film 'Behind the Flame,' now ready for release by the North Thames Gas Board. It is based on the film of the same title issued by the Gas Light and Coke Company, but a new sequence has been added showing the board's Gas Consultative Council in session under its Chairman, Councillor Edwin Bayliss, J.P., L.C.C. Left to right: Councillor Mrs. W. Kader, Councillor Bayliss, and Mr. W. Elliott (Secretary to the Council).



Our photograph is of the stand of the York-Harrogate Group of the North-Eastern Gas Board at the Great Yorkshire Show, Malton. The stand was designed by the display department of the Group in conjunction with the board.

TRADE NEWS

Stewart Gill & Co., Ltd., have moved their offices from 186, Fairfax Road, Teddington, to their works: Benlow Works, Silverdale Road, Hayes (Tel. No. Hayes 4482), to which all correspondence should be addressed.

Albright & Wilson, Ltd., who for the past four years have acted as distributors of silicones in Great Britain for the Dow Corning Corporation of America, announce their intention to commence manufacture of silicones in this country. Silicone products are available in many forms, including compounds, greases, fluids, resins and varnishes, and silastic rubber. The demand for silicones has grown considerably since their introduction in the commercial field.

The **Chaseside Engineering Co., Ltd.,** Station Works, Hertford, has designed a new angle-dozer attachment which can be fitted to standard Chaseside shovels and diggers without any structural alteration to these machines. The value of this addition is that it will doze at 35° on either side of the machine or straight ahead as required by a simple manual adjustment. A safety device is attached which prevents overlift of the blade by automatically returning the control lever to the 'off' position. The device is easily fitted, and a simple arrangement allows the device to be disconnected in a few seconds. The Company can now supply the Chaseside Dumper with a Perkins P.6 diesel engine as an alternative to the Ford V.8 petrol engine.

Abbott, Birks & Co., Ltd., have issued a new catalogue of tools and equipment required for gasworks, mainlaying, and service work, comprising pressure gauges, syphon pumps, pipe fitting tools, drilling tackle, etc. The reference number is 50.

Leaflets received from **Londex, Ltd.,** give details of three of their synchronous process timers. Type SRJ controls accurately the duration of any process either directly or by means of lights or other signals. It is small, adjustable, and automatically reset. Type JPS has the same range but is hand-set. Type ROY timer is designed for those applications where the timed period is not often varied and where electrical means of starting and resetting are required to provide remote or automatic control.

W. Edwards and Co. (London), Ltd., Worsley Bridge Road, Lower Sydenham, S.E.26, report the introduction of two new instruments, the model CG1 barometrically compensated dial gauge and an inexpensive Pirranti type gauge with lead detection. The first is a precision mechanical instrument, ideal for the continuous measurement of low gas and vapour pressures, and can be supplied at various pressure ranges from 0-760 mm. Hg., accurate within plus or minus 2½% of full scale deflection. It has the advantage of being unaffected by barometric changes and has no manometric or sealing liquids or mercury hazards. The other instrument is of the hot wire type, operating from a battery or mains with full leak detection. The range is 0.5 to 0.001 mm. Hg.

COMPANY NEWS

B.H.D. Engineers, Ltd.

The second annual report and accounts of B. H. D. Engineers, Ltd. (comprising the Bryan Donkin Co., Ltd., W. C. Holmes and Co., Ltd., and subsidiary companies), covering the 12 months ended March 31, deal with the first full year of trading since the formation of the Group which was made public early in 1949. The year was one of steady progress, reflected in a general increase in output and improved financial results.

In his statement issued with the annual report, the Chairman, Mr. D. M. Henshaw, says the profit of the Group for the year was £259,351 compared with £193,633 for the preceding year. Taxation £146,039 takes more than half this figure, leaving a net profit of £113,312 which is reduced to £108,538 after providing for the interest of the outside shareholders in the subsidiary companies. This £108,538 corresponds to the figure of £75,821 for the previous 12 months. Final dividend on the ordinary shares is 12½% (less tax) making a total of 15% (less tax) for the year.

Total assets have risen from £1,140,811 to £1,370,986, an increase of roughly £230,000. The main increases are fixed assets approximately £60,000, stock and work-in-progress £55,000 and debtors £115,000. Outstanding capital expenditure has also increased by £25,000 to £73,950 during the year, and further expenditure is planned on new buildings and plant so as to deal with new developments both in lines of business already established and in connection with general power plant production. Some of the increase in current assets is caused by transitional circumstances arising out of the transfer of the gas industry from private to public ownership and should, therefore, be only temporary. On the other hand, part of the increase is due to the larger output and should be more permanent. The dividends for the year will absorb £30,570 and this will permit a sum of about £90,000 to be added to the reserves and the carry forward and thus to be available to finance the increase in assets. Bank overdrafts have risen by approximately £60,000 from £27,040 to £86,081.

Last year reference was made to a proposed scheme to provide pensions for members of the staff of the various companies. This scheme has now been agreed upon and came into operation on August 1.

The increase in total turnover reflected in the increased profit has been fairly equally divided between the five companies. Although a considerable proportion of the sales are due to business done with the nationalised industries, an increasing proportion is attributable to the development of new specialities manufactured under licences and agreements with members of the staff and also with associated companies overseas. Representatives of the companies have made visits to the United States and the Continent in connection with these arrangements, which will result in increased business of a general character.

PUBLICATIONS RECEIVED

We have received from the Association of Scientific Workers a 'Report on Petroleum,' by the Association's Petroleum Sub-committee. This is one of a series of surveys and is published at 6d.

The Purchasing Officers' Association has issued three more booklets in its new raw materials survey series. These are *Cotton*, by Arthur Tattersall (price 2s.); *Oils and Fats*, by J. F. Blitz, M.A., B.SC. (price 2s. 6d.); and *Precious Metals*, by Dr. L. B. Hunt (price 2s. 6d.).

The British Welding Research Association has issued a new publication, T.26, 'Recommendations for the Design and Fabrication of Arc Welded Structural Steelwork, Built-Up Girders and Compression Members.' This memorandum is the second in a series based on the work of the FE.13 Committee of the British Welding Research Association on Codes of Practice for Welded Building Structures, intended to provide guidance on the design, fabrication, and erection of arc welded structural steelwork. The recommendations have been drawn up after a detailed study of existing practice. Research continues to be carried out on the subject. Copies are available from the Association, price 1s. 6d. The first 'Stanchion Bases, Caps and Joints' is also available, price 9d.

The July number of the *Powers-Samas Magazine* contains an interesting and informative article on the Powers-One system of stock control and analysis. 'Keeping the Nation's Books,' another article, describes the use of Powers-Samas equipment in the service of the New Zealand Government. It is used there in the Treasury, for Customs, Social Security, and in other departments. The conversion to these machines is described as 'a triumph of adaptation and ingenuity on the part of those responsible.'

The latest number of *Tin & Its Uses* includes a summarised report on the work of the Tin Research Institute during 1949. The outstanding events were the opening of offices in the United States, Belgium and Holland to extend the service of technical information and assistance to tin-consuming industries; the change in the chairmanship of the Council and the commencement of alterations and extensions which will double the size of the headquarters and laboratories building at Greenford. Building operations, which are now almost completed, have necessitated modification in the research programme and advantage has been taken of the interruptions by devoting more time to technical service overseas and to the production of up-to-date practical publications, which now cover all the major applications of tin.

ADAPTATION OF THE COKE OVEN TO THE GAS INDUSTRY

By W. BOULIN, Leader of the Delegation from Gaz de France, and P. VERRET, Chief Engineer to Gaz de France.

The following is an abstract-translation by Our own Correspondent of the French communication to the Fourth World Power Conference in London last month.

IN 1938, coke oven plants in France provided about 12% of the total production of town gas. It is anticipated that this proportion will reach 25% in 1953 and that it will exceed 50% in 1957.

The paper, after recalling how two techniques, different in their origin, object, and methods, have coalesced in the gasworks coke oven, indicates the reasons for the importance acquired by the coke oven in the French gas industry, shows how it has been adapted in design and exploitation to the problems of gas supply and, finally, sets out the limits which these problems impose on the development of coke oven plant in the gasworks of France.

The history of the coke oven is briefly outlined. Designed to produce metallurgical coke, in the original ovens practically the whole of the gas and by-products were burned during carbonisation. It was not until 1850 that the by-products oven first appeared but still nearly all the gas was consumed for heating. In the gasworks, while the necessity to provide a gas suitable for distribution led to the separation of tar, ammonia, and sulphur compounds, coke remained a by-product of which the heating of the settings left only small quantities available for sale. Little by little, however, improvements in the technique of heating increased the coke available at the gasworks and the gas at the coke ovens, and the problem arose to find markets for the surpluses. The growing needs of the chemical industry led both coke oven plants and gasworks to develop the recovery of by-products.

After the first world war surplus gas from coke ovens became considerable in many regions and grid systems were constructed to feed towns often distant from the coke oven plants, *e.g.*, the Ruhrgas and Saarferngas in Germany, Distrigaz in Belgium and the Ste. Règionale de Distribution in Northern France. Then also, for reasons given later, the coke oven began to be adopted in the gas industry: in London, Rotterdam, Basle, Zurich, Stuttgart, etc. France did not lag behind, and on the eve of the war four gas coke oven plants were in operation, at Strasburg, Gennevillers, Villeneuve-la-Garenne and Toulouse. After the second world war, the Monnet Plan visualised a 'rapprochement' of the carbonising industries, considering them not as two distinct industries but as two branches very closely connected, with one object in the national interest: the up-grading of the value of coal. The plan included the construction or reconstruction of coke oven plants in the coal, steel, and gas industries of France.

Coke Oven Plants and Gasworks

It is particularly objected that the gas-coke-oven requires more coal and produces more coke than the normal gasworks retort plant, and that the gas-coke-oven experiences difficulty in obtaining the necessary quantity of suitable coal and especially in marketing its coke. Further, it would be more sensitive to variations in coal and coke prices. On the other hand, because of the size of the carbonising unit, normally batteries of at least 10 to 15 ovens, and of the impossibility of letting them down once they are put into operation, it would seem difficult to adapt the coke oven plant to gas requirements and still less to seasonal variations in demand.

These criticisms are not without foundation, but rather than disqualifying the coke oven altogether from the gas industry, they impose limits to its employment. It could only be contemplated to meet the requirements of a large town or, thanks to the possibilities of concentration realised by progress in the transport of gas over a great distance, to supply a region with a population of sufficient density. But in either case there must exist a sufficient demand for the coke.

The want of flexibility of the coke oven is an idea widely held, based on some confusion between the plant itself and the individual oven. Though the coke oven battery cannot be lighted up and let down according to demand, the time of carbonising can be varied over fairly wide limits, about 20% either side of the mean, in a relatively short time and without damage to the refractories. Experiences with a new type of oven, called 'the free expansion oven,' designed by a French builder, have shown that it is possible to conceive coke ovens capable of wide variation in operation and even of being stopped without any fracture of the brickwork.

The coke oven battery possesses considerable flexibility too, when designed for compound heating: the possibility of changing from rich gas to producer gas heating permits an increase in the volume of gas available for distribution to the extent of as much as 65%; and that will obviate in certain installations costly peak load plant as for example at Rouen, which could not be dispensed with in a gasworks of the same capacity.

Another form of flexibility in the coke oven not possessed by the gasworks is the possibility of using, in mixtures, a range of coals from 18% to 33% in volatile content with yields of gas at 4,200 calories (440 B.Th.U.) varying from 12,700 to 15,900 cu.ft./ton. This latter possibility permits a considerable variation in the production of coke both in quantity and quality. In the gasworks one can vary within fairly wide limits the quantity of coke produced, by steaming, water-gas, etc., but this range is narrower than that of the coke oven which can change from coal gas to producer gas for heating, can vary the nature of the coals treated and finally, as in the gasworks, use peak load plant. But while the gasworks produces one kind of coke, the coke oven may produce metallurgical coke, hard coke, reactive coke and in some conditions, foundry coke.

Thus the flexibility of the coke oven, whether in the production of coke or in that of gas, is one of the advantages of the coke oven in the gas industry. The possibility of the production of metallurgical coke in this plant is an essential point. But the coke oven plant possesses other important advantages: lower costs of construction for equivalent capacity, lower general expenses owing to a greater concentration of plant, better utilisation of labour, superior output per unit of material which is translated into a sensible economy in fuel consumption and a greater recovery of derivative products, coke, benzole, ammonia, etc., and these of superior quality, resulting in a lower net cost of gas. Thus while a large gasworks consumes coke at the rate of 160 to 220 kgs. per tonne of coal carbonised that of the coke oven is 120 to 150, production per man per day is 500 to 800 cu.m. in the gasworks against 1,200 to 2,000 in the coke oven, cost of production 1.5 to twice the cost per kg. of coal treated against 0.8 to 1.1, and the cost per cu.m. of annual capacity 40 to 50 fr. for gasworks against 22 to 30 for the coke oven.

Coke Oven Technique

Installations are described with a discussion of the operation of gas-coke-oven installations bringing out the differences between these and coke ovens at collieries and steel works. These differences result from the particular function of the gas-coke-oven which is primarily to assure the public supply of gas. The others supply their surplus gas to the synthesis industries or to distribution systems and it is these which provide the ancillary equipment of purification, etc.

The gasworks coke oven plant must be provided with coal storage of five or six qualities of coal for at least six weeks. Coal handling plant must be capable of stocking in a day up to three times the tonnage treated in 24 hours. Coal mixing plant is of the greatest importance. The mixture is broken down fine in hammer mills. Duplication of all plant is vital.

It is preferable to group the ovens in batteries of not more than 10 to 20 in order to secure the maximum of flexibility and to effect repairs. The number of ovens per battery is evidently a function of the initial capacity of the installation: a works of 3,000-4,200 tons/day might have batteries of 20 or even 25, while a smaller installation of 600-800 tons/day should not have more than 10 to 15.

The batteries will be designed for compound heating with the major provision for produced gas firing. The ovens are similar to those for other installations; large in capacity, built

in silica. Differences are that these ovens are equipped with metal-to-metal charging doors instead of luted doors which are susceptible to leakage, superheating of the top of the oven is reduced in order to obviate cracking of hydrocarbons in the gas—there is a tendency to the upgrading system. The use of double hydraulic and the use of larger ascension pipes and hydraulics is recommended to obtain a better gas quality by equilibrium of pressures in the different chambers. The requirements of urban amenities and hygiene must be borne in mind. Other coke oven plants form part of industrial complexes where the Services d'Urbanisme lose some of their rights but the gas-coke-oven is mostly built near dense populations or if in open country outside the great industrial zones. The smoke and dust of charging and discharging must therefore be reduced to the minimum.

Purification is not essentially different from that of the ordinary gasworks. Debenzolisation is applied after purification and the purified, debenzolised gas is mixed with producer gas, itself purified, to obtain and control the desired calorific value. Chemical purification is applied only to such surplus gas from the colliery or steelworks coke oven as is to be delivered to town supply.

Coke discharged from the ovens is generally quenched with water. The high cost of dry cooling limits its application to cases of necessity, such as the avoidance of local nuisance. Since the gas-coke-oven must be able to produce different varieties of coke, the grading and handling plant is much more complex than that of normal gasworks practice or than that of the other types of coke oven plant. The treatment of other derivatives, tar, benzole, ammonia, presents no differences from that of gasworks practice.

On the other hand, the producer gas plant is an essential feature of the gas-coke-oven installation. With colliery coke ovens the producer is still exceptional; the heating of the battery is still generally effected with the coal gas. The steelworks oven is and will be heated with rich gas or with blast furnace gas. But with the gas-coke-oven the producer gas plant not only provides fuel gas to the battery but supplementary gas for the adjustment of the calorific value of the final supply.

The choice of the type of producer presents two problems; the size of the unit and the nature of the fuel to be gasified. Until recently the fuel used was small coke. The tendency to-day is to mixtures, *i.e.*, to producers capable of gasifying indifferently coal or coke. This practice is only economically sound if it is possible to use cheap coals. It is imperative, however, when the plant is designed to produce metallurgical coke, when the necessary proportion of small coke would not be forthcoming to produce fuel gas for the batteries and for adjustment of calorific value. In any case the double purpose producer provides another form of flexibility in the gas-coke-oven since it can, according to the markets, use coal or coke for these uses. The size of the unit is related to the capacity of the installation. Beyond capacities of 1,000 tons of coal per day, producers gasifying 45-70 tons/day would be used—for very large installations producers as big as 120 tons/day have been suggested. On the other hand in smaller installations producer capacities of 20-40 tons/day give more flexibility and a higher coefficient of utilisation. Additional producer plan may be provided to take care of peak gas demands. To conform to the regulations of the Services d'hygiène et d'urbanisme the disposal of effluent liquors presents a grave problem. These liquors cannot be evacuated as they are to the rivers. They must either be diluted or employed to saturate the air blast of producers, or if the installation is large they must be treated to extract noxious products, essentially the phenols. The necessity to provide coke for domestic use without an objectionable smell rules out the practice in some installations where effluent liquors are used for coke quenching.

Conditions of Exploitation

The paper proceeds to discuss the conditions under which it is employed in the production of town gas. Designed normally to be heated with producer gas fuel it uses coal gas for this purpose only to obtain flexibility. In periods of normal gas demand only a few ovens are kept under coal gas heating; these are turned over to producer gas firing in peak load periods. In periods of low demand the number of ovens under coal gas firing is increased. The same principle is applied to variations in demand for coke. When the demand for coke is low and when a metallurgical coke is not required, the coal selected for treatment is as rich as possible with the limit of 32% volatiles imposed by the need to keep a coke strong enough for convenient discharge. The whole of the coke is broken and gasified partly in the producers, and if available, in water-gas plant. When the coke demand is high, and particularly if metallurgical coke is required, the plant may be arranged to treat coals with only 20-22% volatiles. Of the coke produced only that proportion is broken after the demand is satisfied. Coal gas may be used for heating and it may be preferable to use coal in the producers.

Between these extremes the coke oven plant may be operated in conditions which are very varied. Possible variations in an installation of 800 tons/day capacity are tabulated. This installation feeds a region in the centre of France where the average daily demand is 220,000 cu.m. with maximum 320,000 and minimum 195,000 cu.m./day.

Economic Limits of the Gas-Coke-Oven

The economic equilibrium of the colliery or steelworks oven cannot be isolated from that of the complex with which it is integrated; it is often maintained more or less artificially by manipulation of charges upon it. The gas-coke-oven on the contrary constitutes an independent entity; like the gasworks, its economic equilibrium depends upon that of the cost and selling prices of the gas made and sold. The paper does not enter into the establishment of the cost price; it deals only with capital cost, labour cost, coefficient of utilisation and the relative prices of coals and cokes. It is shown graphically that in terms of French costs and prices, except in exceptional circumstances, installations with a daily capacity of 300 tons/day or less are of little interest. Above 1,500 tons the economy achieved by increase of capacity is low without disappearing altogether. The curves show that, contrary to the opinion held in some quarters that the optimum economy is obtained with capacities between 1,200 and 1,400 tons, there is no such optimum. They merely show that the reduction of cost price is more sensible below 1,200 tons. The coefficient of utilisation is never equal to unity. The curves show, for example, that an installation of 700 tons daily capacity operating with 90% utilisation produces a cheaper gas than one of 1,000 tons capacity at 70%. Finally, the capacity of the installation influences only a part of the elements constituting the cost of production. The essential elements are the prices of coal, coke and other derivatives.

Costs of production in an installation with a daily capacity of 800 tons and a mean coefficient of utilisation of 90% are analysed and the results are graphed for a range of coal prices. The ratio between the price of coal and that of coke is seen to have the greatest influence on the cost of gas made. The greater the capacity of the plant the greater the relative influence of this ratio. An improvement in the quality of coal, particularly a reduction in its ash content improving the quality and value of the coke, has a greater influence on economy of working than any improvement in labour cost, general expenses or increase in the capacity of the plant.

Favourable Conditions

The gas-coke-oven shows no advantage with a less daily capacity than 600-700 tons. For a gas demand not exceeding 200,000 to 240,000 cu.m. (say 7 to 9 mill. cu.ft.) per day the ordinary gasworks is preferable. There is, however, one exception to this rule, the case in which a demand for gas of the order of 100,000 to 120,000 cu.m. (3½ to 4 mill. cu.ft.)/day coexists with demands for metallurgical or domestic coke of the order of 400-500 tons/day, where coke-oven plant at 600 tons/day heated permanently by coal gas would be justified. In France such a case exists at Strasbourg.

The gas-coke-oven is justified, then, generaly in cases where:

(1) it can feed a dense population at a rate exceeding 200,000 250,000 cu.m./day;

(2) there is the possibility of concentrating, by transmission under pressure, the needs of two or several towns so that the total consumption reaches this figure.

But these conditions are not sufficient. It is indispensable to have demands for coke compatible with the production of the plant and that within a radius which is not excessive. At Marseilles, for example, the coke oven is not justified, though gas consumption must soon exceed 300,000 cu.m./day, because the local and regional demand for coke is too small. And in the second case concentration of production is only admissible if the cost of transmission of the gas does not exceed the economies achieved. The optimum solution in each case can only be determined by a careful consideration of and calculations based upon the factors in that particular case.

(*Continued at foot of p. 404*)

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Gas in France

From Our Own Correspondent

IN the June issue of the *J. des Usines à Gaz*, M. Georges Combet continues his 'Notes on the Architecture of the Gasworks.' He develops the theme of the collaboration of architect and engineer. He quotes the teaching of Gropius to his architectural students at Harvard, that a piece of architecture must combine simultaneously the three elements, composition, construction, economy. Let us suppose that the architect is called in to collaborate with the engineer. He has begun by inspecting some gasworks. He has familiarized himself with the appearance of storage plant, retort settings and producers, purifying plant and gasholders. He feels there can be no question of embellishing plant like this, which by its very nature is repulsive to all appearance of ostentation, all intentional decoration, to all formalistic expression. He understands that his sole ambition must be, as Albert Laprade has said, to simplify, to unify, to introduce order; 'and before constructing the shell, he is anxious to know the animal.' It is desirable that his collaboration with the engineer should extend to all the problems of composition: the general plan of the works, the arrangement of each section, the construction of each building.

Architectural Collaboration

Often the engineer does not appreciate the idea that the composition of an industrial plant lay-out should not be his task exclusively and he may even be somewhat offended by having to consult an architect about the arrangement of the several items of his plant. But what conscientious engineer is not a little anxious on the day when the first brick of the new installation is laid? The general lines of the new creation are fixed beyond recall, the lines of future extensions are irrevocably established. If he commits an error, if he involuntarily places some obstacle in the way of further development, the works will suffer for all time. It may never present the satisfactory appearance of a well planned undertaking. Collaboration with an experienced architect may prevent dissatisfaction in the future. And if that collaboration begins in the very early stages of design, arrangement and re-arrangement of the main masses may be made without in any way detracting from the technical efficiency of the whole. For it is precisely in the composition of the plan—and not in the design of façades—that the architect can collaborate effectively with the engineer.

M. Combet goes on to exhort the architect on familiar lines —not to try to make the gasworks buildings look like great warehouses, or cinemas, or monumental buildings. They should look like what they are, should be worthy of their function and should express their function in their appearance, and should do so with economy and without interference with their technical efficiency. A successful industrial architectural design is always orderly. But this orderliness must arise from the nature of the work to be done and from its vital necessities—imitating that natural order whence arises the beauty in plant or animal. There is no success when the attempt is made to force industrial constructions into a conventional architectural style.

British Examples

M. Maurice Veillon's book, *Notes on Industrial Architecture*, has now been published. It is a reprint of articles which have been presented in abstract here. In addition there is a short section on industrial architecture in Great Britain. Photographs of recent erections are reproduced: retort house buildings by West's Gas Improvement Company, Drakes, Ltd., and the Woodall-Duckham Companies, water gas plant buildings by Humphreys & Glasgow. The work is introduced by a preface by M. François Vitale, Chief Architect of Civil Buildings and National Palaces and Professor at the Ecole Nationale Supérieure des Beaux-Arts. We repeat that though this work is available only in the original French it is well worth a place on the engineer's shelf if only for its large number of vigorous, informative sketches, drawings, and photographs, all from the hand of a man who knows and loves his subject.

M. Clapier, Engineer in Chief of the Western Division of Gaz de France, writes on the 'valorisation'—the upgrading in value—of gas coke. 'We find ourselves today at the beginning of a period of keen competition among solid fuels; it is important, therefore, that we should try to produce a fuel whose qualities are incontestable in order to capture and keep the market while retaining a good price.' If for example an undertaking could reduce by 10 points (say, from 25 to 15% of the total) the proportion of fines in the tonnage of the coke produced, a considerable sum would be saved annually. The properties desirable in coke are of two kinds, those which depend on the coal carbonised (its cohesion, hardness, ash content and its fusibility, reactivity) and those which result from the treatment of the coke itself (its humidity, grading, freedom from fines and dust, etc.).

Coals available to the industry in France are often either too highly swelling or too low in coking properties to be utilised alone. They are ranged in three main categories, high, medium and low swelling indices. There are no precise rules to foretell the results of mixing two or three coals with known individual properties; they can only be determined by experience. In other words, the quality of the mixture is not proportional to that of the constituents, in particular the swelling index is not the average of those of the individual coals; it is nearer to that of the lower swelling index. The addition of a quite small quantity of low swelling coal generally suffices to diminish very considerably the index of a highly swelling coal such as Courrières. On the other hand, with a mixture experience shows that a higher percentage of large coke is obtained than is indicated by an average of the results in this respect with the constituent coals. Finally, mixing 50% of a rich coal highly swelling with 50% of the lowest swelling category generally gives a good coke and a good yield of gas.

Coal Breaking and Mixing

Apart from the coke oven plants and certain large gasworks on the Parisian region, most of the works in France are not equipped with the necessary apparatus to make mixtures of coals. Recent modifications in the coal market and the necessity to use more and more French coals will lead to the provision of breaking and mixing facilities in all works of some capacity. These installations will include breaking or scalping plant, storage for the different coals in distinct silos, plant to take coals from the several silos in definite proportions and a final breaking plant arranged to complete the mixture. It is possible that some works equipped with intermittent retorts may carry mixing further in view of the local solid fuel market. It must not be forgotten that if it is a question of producing a really dense, hard coke there is only one way in which this can be done—the mixture of pulverised coals in the correct proportions (in a word 'blending' —Trans.)—and for this purpose the hammer mill must be used.

In a few remarks on the effect of the method of carbonisation on coke quality. M. Clapier says it is necessary to distinguish between works equipped with continuous retorts and those with intermittents. In the former a very dense coke is never obtained but one can obtain a convenient quality if the carbonising temperature is sufficient and if the mixing is such as not to induce jamming or hanging-up. In any case the coke is better in quality if steaming is not pushed too far.

On the treatment of the coke after it is made, humidity depends on the method of quenching. A good commercial coke should not contain more than 3 to 5% moisture. One must distinguish between the humidity arising from quenching and that absorbed from rain when the coke is stocked in the open. M. Forrières has shown that moisture absorbed in quenching remains very nearly constant, it diminishes very little in stock, but the moisture from rain runs away as quickly as it comes. He states also that red hot coke can absorb considerable quantities of water, as much as 25%, while coke exposed to very heavy rain only absorbs very small quantities which disappear after two or three days of dry weather. Although it may be preferable to store coke under cover it is by no means absurd to store in the open and yet to seek to reduce the water used in quenching. Several methods of quenching are mentioned including that with steam in the

continuous vertical. Screening and de-dusting are very briefly discussed. The tendency to the use of the vibrating screen is noted.

Methane from Coal Seams

An article is reproduced from the *Revue Générale du Gaz* giving the results obtained in the collection of fire-damp (methane) in the Belgian collieries. The difficulty hitherto has been to collect this valuable gas before it becomes diluted with air. The problem is solved by boring to considerable distances into the coal and/or rock which may contain the gas under considerable pressure—anything from 1 or 2 to over 40 atmospheres. The principle of the method is to bore holes, which may be 3 or 4 in. diameter, into the strata surrounding the working face, mostly into the roof. These holes, which may extend 70 to 80 metres, are bored a short distance ahead of the working front and cut into the neighbouring gas-bearing beds. As soon as these show a release of pressure, which indicates the presence of gas, they serve as drains of the fire-damp which can thus be collected and conducted to the surface in pipes of diameters from 6 in. to 8 in. The total quantity of methane evacuated from Belgian mines per day is in the region of 2 mill. cu.m. It will never be possible to collect all this but already existing works are collecting 1,674,565 cu.m./day. At one colliery of the S/A John Cockerill, about 18,000 cu.m./day is being collected from five borings. The gas contains a minimum of 90% methane; it is free from H_2S. A table due to M. Breyre shows that the average methane content from mines in Belgium is 97%; he remarks that CO is never present and that all the samples contain a little helium. This article is well worth the study of those interested in the possibilities of turning to useful ends this menace of the coal mines.

News Items

Perhaps the most important news item, commented upon editorially, is the release of the industry in France from the fixed price which has oppressed it since the war. Tariffs are to return to the rule of the concessions and contracts previously in force by which prices are regulated in relation to costs. They will be fixed by negotiation with a right of appeal to the Consul Supérieur de l'Electricité et du Gaz. The names are announced of the members appointed to the Commissions Supérieure Nationale of the personnel of gas and electricity undertakings. An account with photographs is given of the exhibits of the gas industry at the Foire de Paris which showed in a striking and effective manner the applications of gas mainly in the domestic field but with some industrial applications.

The Fourth World Power Conference

In addition to the paper on the 'Adaptation of the Coke Oven to the Gas Industry' by MM. Boulin and Verret, an abstract of which is published in the *Gas Journal* today, two other papers were presented to the Conference by members of the French Delegation, M.R.A.M. Doumenc on the 'Underground Gasification of Coal' and M. G. Nerot on the 'Manufacture of Peak Load Gas in the French Gas Industry.'

M. Doumenc's paper is a report of researches undertaken by the Research Department of the Coal Industry and in particular of the progress of work in this direction in Morocco. Here the coal is of the anthracite class of good quality. The object is to obtain gas of low quality but capable of industrial use—with a calorific value of the order of 90 B.Th.U./cu.ft. at a price favourable to power generation on the site. The principle of the scheme is to blow air down one bore-hole, across the seam a distance of 100 m. through a horizontal cutting, taking the gases away through another bore-hole. The air is pre-heated in an oil-fired combustion chamber for a sufficient time to ignite the coal. In the test described gas was being generated after 160 hours blowing with heated air but the test was not continued. The results cannot be described as otherwise conclusive. At Montluçon experiments with models are in progress.

M. Nerot outlines the reasons why the French gas industry is developing its production of make-up gas, to achieve an appreciable economy in coal and particularly imported coal which forms about one-third of the total used in the industry, to smooth out the rate of coke production, to deal with peak loads, to reduce the necessary expenditure in the more costly base load plant and to improve working conditions thanks to the automatic operation of the producer type of plant. The several types of plant used are briefly discussed; the coke fired producer, water gas, steaming, oil gas whether in conjunction with carbonising or water gas plant or by itself, complete gasification, and the use of propane. Economic considerations are dealt with in general terms. The general conclusion is that the French gas industry will tend more and more to automatic processes using raw materials (coke, petroleum products, non-coking coals, other than gas-coals, concurrently with carbonisation and the utilisation of residual and natural gases.

COKE OVEN IN GAS INDUSTRY—Continued from p. 400.

It is in the light of the foregoing considerations that Gaz de France, faced with the necessity of reconstituting its potential of production, subject on the other hand to the directives of the Monnet Plan which is desirous of increasing in a large measure the number of coke ovens, has established its programme.

The Paris region, which already possesses coke-ovens at Villeneuve-la-Garenne and Gennevilliers, will be provided with four coke oven plants with a global capacity of 11,000 tons/day. These, connected by inter-connecting mains, will constitute an 'ensemble' of production destined to feed Paris its suburbs and the Parisian Region as far as Orleans, Fontainebleau, Creil and Chartres. Domestic coke will find a satisfactory market, particularly for central heating in Paris and its suburbs, while the industrial zone will also provide a useful market for all grades of hard coke. In case of need these ovens will be able to contribute to the national production of metallurgical coke; already the ovens of Villeneuve-la-Garenne (1,800 tons/day) are playing a part in this.

At Grand-Quevilly, near Rouen, a coke oven plant of 800 tons will supply gas to Rouen, Le Havre and the Basse-Seine. Replacing gasworks destroyed in the war or too antiquated and a metallurgical coke plant which is worked-out, it will be situated in particularly favourable conditions both for coal supply and markets for coke, the greater part of the latter being required by the blast furnaces of Rouen.

In the Centre, the necessity for reconstructing the greater part of the gasworks in the triangle Vierzon-Dijon-Clermont has led to the provision of a coke-oven plant of 1,600 tons/day which will be built in the proximity of the collieries of Saône-et-Loire. It will permit the extinction of the gasworks of the whole region and of the antiquated coke oven plants of the Creusot and of Montluçon. The coke made will be partly metallurgical and partly domestic.

In the East, the growth of gas demand at Strasbourg and the surrounding region has rendered necessary the release of coal gas hitherto used in the heating of the ovens of the Strasbourg installation where a producer plant to gasify coal is in course of construction.

In the second stage, the construction of a large coke oven plant at Lyons is contemplated. On the other hand, Gaz de France has rejected the coke oven for Marseilles and for Nantes, where the conditions mentioned above are not present as well as for the region Calais-Dunkirk which will be more advantageously supplied from the coal field of the Pas-de-Calais.

Finally it had been intended to install coke ovens at Maubeuge to supply gas to the valley of the Sambre and the region Aisne-Marne, and to produce metallurical coke for a group of blast furnaces near Maubeuge. But the important place held by industrial gas in this region makes precarious the financial equilibrium of coke ovens in the ruling price relations of the different fuels, and without abandoning the project in principle, Gaz de France will not proceed with it for the moment.

The paper claims to have set out the reasons which militate in favour of the coke oven and the conditions which limit its use in the gas industry. Under certain conditions, the gas-coke-oven represents today the best technical means of resolving at once the problems of supplying gas to vast sectors of sufficiently dense population and of the most rational utilisation of large tonnages of coal. But it must not be regarded as a panacea, still less as a definitive solution of these problems. It marks a stage in the evolution of the gas industry, but there is no reason to think that evolution will stop there. It is possible that, as at present the carbonisation of coal is disappearing in many small works before the use of propane, in a not distant future medium and large works will also abandon carbonisation to turn to the complete gasification of lignites or coals of low quality, or towards the cracking of petroleum products.

Motor how you will . . .

I will give you

MORE MILES PER GALLON!

says Mr. MERCURY

All kinds of remarkable things can happen when designers really get cracking. But whatever they may think up for you (short of rockets or atomic turbines) National Benzole Mixture will always be the spirit to give you more miles per gallon. That's because benzole is not only an effective anti-knock substance, but it is also a powerful fuel in its own right. Let's hope it won't be long before you can ask for it—and get it!

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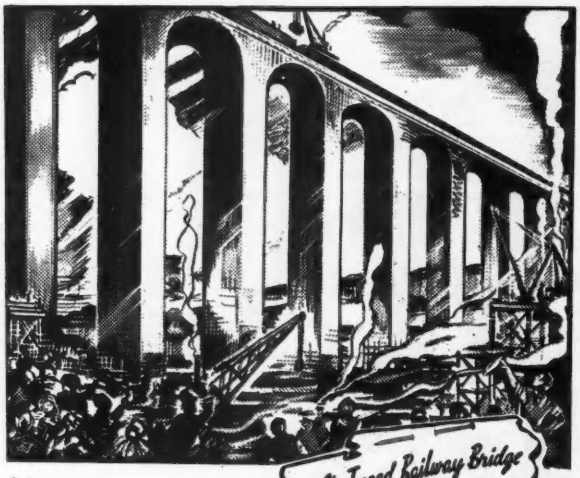
100 years ago



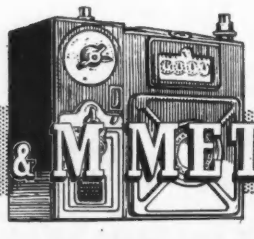
The Tweed Railway Bridge

Saturday, March 30, 1850. Price 4½d.

PROGRESS OF TWEED RAILWAY BRIDGE.—It is reported that on Tuesday the key stone was placed in the last arch of the railway bridge, which for three years past has been in the course of formation for the purpose of connecting by a permanent way the Berwick and Newcastle and North British railways. The occurrence was observed with due ceremony, and came off with great eclat.

Excerpt from "THE SCOTSMAN," Saturday, March 30, 1850.

100 YEARS may be but a fleeting moment in the history of mankind, but it is a long span in the history of a Company. During these past 100 years the firm of Alder & Mackay has met and bridged many obstacles. Sometimes the bridging has been done over the human valleys of death and despair in peace and war—at other times over the mountainous realms of scientific research. **To-day the keystone of this 100 Years' bridge is there for all to see —the integrity of the Measure of Accuracy.**



The A & M METER

CELEBRATING 100 YEARS' SERVICE TO THE GAS INDUSTRY

ALDER & MACKAY, LTD., GAS METER MANUFACTURERS, EDINBURGH, BRADFORD, MANCHESTER, LONDON, BELFAST and CORK.

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SAVILE TOWN, DEWSBURY, YORKS.

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"BROWNOX-de-LUXE" PURIFYING MATERIAL
Purchase:–
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COMPRESSORS & EXHAUSTERS FOR AIR AND GAS.
See our Advertisement Next Week.
REAVELL & CO. LTD. IPSWICH.

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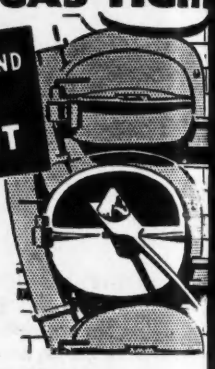
when patched with–

ONX SUPER 83 BRAND FIRE CEMENT

A recent testimonial from Gas Dept.
"We are pleased with results obtained after using ONX Super '83' Brand.
"Our settings were very bad, with large cracks in retorts, and portions of wall actually collapsed.
"Now, six months after repairing 28 retorts they appear as sound as ever; we anticipate the life of the settings will be prolonged."



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We believe that the "M & M" is the strongest and most secure Meter Lock in existence—but that is not just our opinion—Gas Undertakings all over the British Isles and overseas know that, guarded by an "M & M," the money in their meters is "SAFE."

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PUBLISHERS' NOTICE

The "Gas Journal" is published every Wednesday, price 1/-; by post 1/2d.

Subscription Rates: Home and Empire :- 45/- per annum; Foreign :- 52/- per annum. (Both payable in advance.) A copy of the "Gas Journal" Calendar & Directory is presented each year to continuous subscribers.

Classified Advertisements: All small classified advertisements are charged at 1/6 per line (approx. 7 words) - minimum charge 7/6. A Box Number address occupies 2 lines, and a further 6d. is charged towards cost of postage on replies. Copy must be received by first post on Monday to ensure insertion in that week's Journal.

Displayed Advertisements: Rates obtainable on application to the Business Manager. Change of copy for displayed spaces must be received 14 days prior to publication if proofs are required. Type area of inside pages 10" deep x 7" wide; block screen 120.

BUSINESS MANAGER: S. T. CULLEN

MIDLANDS OFFICE: 10, Union Street, Birmingham.

NORTHERN MANAGER: W. Q. Foster, 33, St. Helens Road, Harrogate. 'Phone: Harrogate 84291.

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Telephone: CENtral 2236-7. Telegrams: Gasking, Fleet, London.

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which has stood the test of 70 years and rapidly absorbs 60% Sulphur (wet basis).

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GAS PLANT

of every description

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APPOINTMENTS VACANT

DRAUGHTSMAN with sound knowledge of gasworks and allied chemical plant design required. Age 35 or upwards. Pension scheme. Permanent position to suitable applicant.

Fullest details of experience, age and salary, to R. & J. DEMPSTER, LTD., Gas Plant Works, Manchester, 10.

WORKING MANAGER required to take charge of a branch gas meter factory in Nottingham. Applicant must be thoroughly experienced in meter manufacture, repairing, testing, &c., a good organiser and capable of controlling labour, making up wages, &c. Replies will be treated in strict confidence. Full particulars to No. 9926, *Gas Journal*, 11, Bolt Court, Fleet Street, London, E.C.4.

DRAUGHTSMAN - DESIGNER wanted, age about 35-40, with practical experience in the designing and construction of gas cookers and other domestic gas appliances. Must be conversant with the production of both iron castings and sheet metal parts. Permanency and good prospects for the right applicant.

Apply STOVES, LTD., Rainhill, Liverpool.

A **WELL-KNOWN and old-established firm** of manufacturers in the Midlands has vacancies for the following sales personnel:

A. TECHNICAL SALES REPRESENTATIVE for solid fuel coke burning grates. Not over 40 years of age, and with wide experience of installation and selling methods. Should be capable of instructing and lecturing fitting staffs.

B. ASSISTANT FOR SALES OFFICE, with full experience of internal organisation, sales letter writing, systems, &c.

Applicants for the above positions should state age, previous experience, and salary required, in confidence, to No. 9925, *Gas Journal*, 11, Bolt Court, Fleet Street, London, E.C.4.

MESSRS. HENRY BALFOUR & CO., LTD., Leven, Fife, invite applications for an appointment as TECHNICAL ASSISTANT in their gasworks plant contracting department. Knowledge of design and operation of gasworks plant essential and experience in a contractor's office would be an advantage.

Superannuation scheme in operation and good prospects of advancement.

Applications, stating age and giving full particulars of training and experience, salary required, and when available, should be addressed to the Personnel Officer.

NORTH WESTERN GAS BOARD

SOUTH LANCASHIRE GROUP.
ST. HELENS UNDERTAKING.
GAS ENGINEERING DRAUGHTSMAN.

APPLICATIONS are invited from suitably qualified draughtsmen for the above position within the salary range of £450-£530 per annum.

Candidates should have received their training at a large gas undertaking and/or with a firm of gas engineering contractors and should have experience of general engineering, building construction, steel structures, gas supply, &c.

The successful applicant may be required to pass a medical examination and to subscribe to such scheme of superannuation as may be adopted in the future.

Applications, appropriately endorsed and giving personal details, particulars of training, qualifications and experience, and accompanied by *copies* of two recent Testimonials, should reach the undersigned not later than 12 days after the publication of this advertisement.

R. L. GREAVES,
General Manager.

South Lancashire Group,
Radiant House,
St. Helens.
August 16, 1950.

SOUTH EASTERN GAS BOARD

SUSSEX DIVISION.
TECHNICAL ASSISTANT.
NEWHAVEN.

APPLICATIONS are invited for the position of TECHNICAL ASSISTANT in the Newhaven Undertaking.

Applicants should be not less than 21 years of age and should have had the necessary chemical training and experience to enable them to carry out routine gas tests and compile manufacturing statistics with little supervision.

The salary will be within the range of £235-£385 per annum according to qualifications and experience.

Applications (quoting reference VAC/94), giving details of age, present occupation, experience and qualifications, &c., should reach the undersigned not later than 14 days after publication of this notice.

R. J. MCCRAE,
Personnel Manager.

Katharine Street,
Croydon.

WALES GAS BOARD

LLANELLY UNDERTAKING.
FOREMAN GAS FITTER.

APPLICATIONS are invited from suitably qualified persons for the above appointment.

Candidates should have received first class training and experience in modern gas fitting practice, and be capable generally in supervising the fitting department. He should be fully conversant with all modern domestic and industrial appliances and maintenance schemes in the fitting department. A sound knowledge of general distribution practice with final City and Guilds Certificate in Gas Fitting and/or Technology of Gas Supply will be an advantage.

Salary will commence at the rate of £390 per annum and terms and conditions will be governed by the appropriate Gas Industry agreement.

The appointment will be subject to satisfactory medical examination.

Applications, stating age and giving full particulars of experience, together with the names of two referees to be forwarded to the undersigned not later than Thursday September 7, 1950.

A. PICKARD, M.INST.GAS E.,
Engineer, Manager and Secretary.

Gas Offices,
Murray Street,
Llanelly.

WALES GAS BOARD

SWANSEA DERTAKING.

APPLICATIONS are invited for the appointment of DEPUTY ENGINEER AND MANAGER to the Swansea Undertaking. Applicants must have had experience in the management and administration of a gas undertaking in addition to possessing a thorough knowledge of modern manufacturing and distribution practice.

The possession as a minimum of the Higher Grade Gas Engineering Certificate of the Institution of Gas Engineers (Manufacture), or its equivalent, will be a necessary qualification. Similar professional attainments in Gas Supply will be an added qualification.

The commencing salary will be within the range of £900 to £1,000 per annum. The Board would be prepared to pay the higher figure mentioned as a commencing salary to a suitable applicant.

Applications, giving details of age, qualifications, experience, and present position, should be submitted, together with the names of two referees, to E. Ablett, O.B.E., Engineer, Manager and Secretary, Wales Gas Board Swansea Undertaking, Gas Offices, Oystermouth Road, Swansea, not later than September 16, 1950.

(*Classified advertisements continued on Supplement 4*

APPOINTMENTS VACANT (ctd.)

METERS.

SUBSTANTIAL Company require well connected REPRESENTATIVE South Eastern, Southern, South Western areas. Good remuneration and prospects first-class man. Apply No. 9920, *Gas Journal*, 11, Bolt Court, Fleet Street, London, E.C.4.

APPLICATIONS are invited for position of MAINTENANCE ENGINEER for large engineering works in South Yorkshire. Applicants should be about 40 years of age and must have practical experience of steam boiler plants, hot water heating installations, air compressors, heavy machine tools, mechanised foundry plant, electric overhead, mobile and derrick cranes. Good organising ability essential.

The position would be superannuated.

A house is available for successful applicant.

Apply in writing, stating age, education, qualifications and experience, to No. 9923, *Gas Journal*, 11, Bolt Court, Fleet Street, London, E.C.4.

THE SOUTH BRISBANE GAS AND LIGHT COMPANY, LIMITED

QUEENSLAND, AUSTRALIA.
DISTRIBUTION SUPERINTENDENT.

APPLICATIONS are invited from qualified and experienced persons up to the age of 45 years to take charge of the Distribution Department of the above Company. Applicants must possess technical qualifications, practical experience and organising ability to fit them for the position. Knowledge of industrial gas equipment of advantage.

Initial salary to be at the rate of £A700 to £A800 per annum in accordance with qualifications.

Present output of company approximately 750 mill. cu.ft. per annum and rapidly expanding. Generous staff superannuation scheme in operation.

Successful applicant required to pass medical examination. From information available cost of living in Australia is approximately the same in the aggregate as in England.

No residence is provided, but the Company would give every assistance in obtaining accommodation. Company would make reasonable contribution towards removal expenses on basis of three years service.

Applications, giving full particulars of age, marital state, qualifications and experience, accompanied by references and endorsed 'Distribution Superintendent, South Brisbane, Australia,' to be addressed to Messrs. R. T. Turnbull & Co., Ltd., 29, Mincing Lane, London, E.C.3, will be received up to September 16, 1950.

W. H. SHEDDEN,
General Manager and Engineer.
The South Brisbane Gas and Light Co., Ltd.

NORTHERN GAS BOARD

DARLINGTON DIVISION.
CENTRAL SUB-DIVISION.
SHIFT ENGINEER.

APPLICATIONS are invited for the position of SHIFT ENGINEER at the Darlington Unit of the Northern Gas Board.

Salary in accordance with the National Joint Council for Gas Staffs Agreement, Grade A.P.T. V, Provincial 'A' Scale—£385 to £465 per annum. Initial placing in accordance with experience.

Applicants must have a sound practical experience in the control and operation of vertical retorts, carburetted water gas plant and ancillary gasworks plant.

JUNIOR ENGINEER.

Applications are invited from young men with a chemical or engineering training for the position of JUNIOR ENGINEER at the Darlington Unit of the Northern Gas Board.

Salary in accordance with the National Joint Council for Gas Staffs Agreement, Grade A.P.T. IV, Provincial 'A' Scale—£250 to £420 per annum. Initial placing in accordance with experience.

The person appointed will be trained for the position of Shift Engineer.

Applications for the above vacancies, stating age, particulars of training, experience and qualifications, should be received by the undersigned, together with not more than two Testimonials, not later than September 9, 1950.

F. WILSON,
Gas Offices, Divisional General Manager.
John Street,
Darlington.

NORTHERN GAS BOARD

APPOINTMENT OF
DIVISIONAL GENERAL MANAGER.

APPLICATIONS are invited for the post of GENERAL MANAGER of the Board's Sunderland Division, comprising the Sunderland unit with six secondary units.

The person appointed will be required to control all activities of the Division, engineering, commercial and administrative under the direction of the Divisional Management Committee, of which he will be a member.

Salary £1,900 per annum.

Closing date for applications, to be addressed to the undersigned, September 16, 1950.

J. F. JACKSON,
30, Grainger Street, Secretary.
Newcastle-upon-Tyne, 1.

WEST MIDLANDS GAS BOARD

BIRMINGHAM DIVISION.
TECHNICAL ASSISTANT.
SOLIHULL DISTRICT.

APPLICATIONS are invited for the position of TECHNICAL ASSISTANT in the Solihull District.

Candidates should hold or be studying for a Higher Grade Certificate of the Institution of Gas Engineers (Manufacture) and should have had a thorough training in all branches of gas manufacture on a medium sized works. A knowledge of engineering draughtsmanship would be an advantage.

The salary will be £420 per annum rising by annual increments of £15 to £465 per annum. The appointment will be subject to such superannuation regulations as may in due course be made, but any existing superannuation rights will be preserved.

Applications, stating age, experience and qualifications, and giving the names of two referees, should be addressed to Mr. J. E. Wakeford, Divisional Manager, West Midlands Gas Board, Gas Offices, Edmund Street, Birmingham, 3, to reach him not later than 14 days after the date of this advertisement. Applicants are requested to quote reference T.P.3 when replying to this advertisement.

F. H. CURETON,
Secretary.

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PHONE 98 STAINES.

SECTIONAL TANKS (steel), 36 ft. by 12 ft. by 8 ft., 12 ft. by 8 ft. by 5 ft., and two 16 ft. by 8 ft. by 4 ft. deep.

W.S. CYLINDRICAL TANKS (two), 30 ft. by 9 ft., (four) 18 ft. 6 in. by 7 ft. 6 in., and (two) 10 ft. by 6 ft. 8 in. diameter.

LOCO BOILERS, 7,000, 3,000 and 1,000 lb. evaporation, 100 lb. working pressure.

Tangye three-throw RAM PUMP, 5 in. by 8 in., 400/3/50.

H.P. CONDENSERS by Weir, 160 and 100 sq. ft. tube area.

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FOR SALE. NATIONAL GAS ENGINE, 26 h.p., magneto ignition; two fly wheels; self starting; together with cooling tanks and all accessories. In perfect order. Can be seen running at works.

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PAYNE & FLOOD, LTD., 282, Oldham Road, Manchester, 4, Phone Col. 1393, are in a position to undertake all types CARBONIZING PLANT REPAIRS, Retort House Reconstruction, Producer Relinings, Hot and Cold Patching, Structural Steelwork Erected and Dismantled. Expert advice available.

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WATER-CONTENT test, three minutes. Already in use in the gas industry, 'SPEEDY' MOISTURE TESTER gives accurate results with coal, coke and ash. Needs no electricity, no skill. Portable, non-electric.

Write for illustrated brochure or order direct, £21 10s. complete.

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LIMIT OF EFFICIENCY CAN BE REACHED
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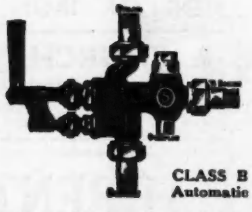

CLASS B Automatic
Operated entirely by one handle
GREEN & BOULDING, LTD.
162a, DALSTON LANE, LONDON, E.8

Domestic Utilisation of Gas

By NORMAN S. SMITH, B.Sc., Assoc.M.Inst.Gas E., and R. N. Le FEVRE, M.Inst.Gas E., A.I.Mech.E.

Since it was first published in 1932, *Domestic Utilisation of Gas* has been regarded as a standard text book. Continued demand has necessitated its reprinting and periodical revision. During the post-war period in particular great progress has been made in the development of appliances and the efficient utilisation of gas. Moreover, there is a new and large influx of students today, needing just such information as *D.U.G.* provides. To meet these demands *Gas Service* has arranged to publish *Domestic Utilisation of Gas* completely revised and brought up to date, as a series of articles, the first of which appears in the August issue. It is anticipated that the response will be considerable, and those interested in obtaining copies for themselves or their staff are urged to inform the Subscription Manager of their requirements.

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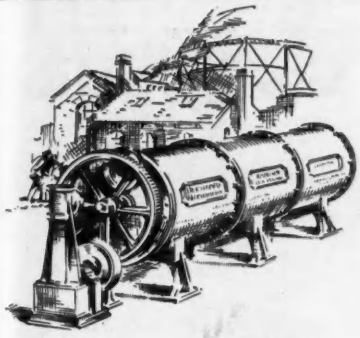
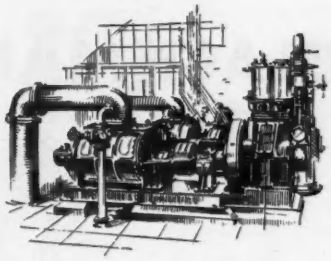
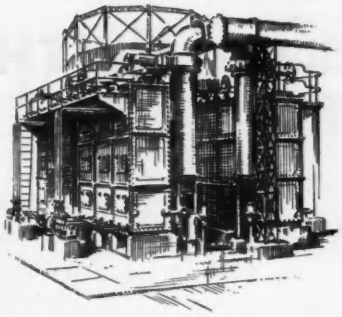


Early Rotary Brush Washer.



Holmes-Connersville Exhausters.

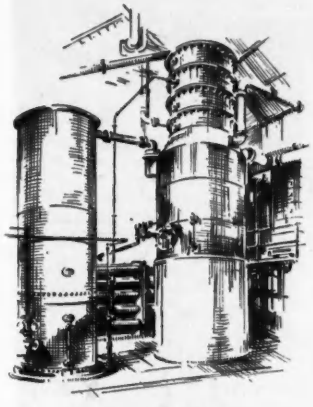


"Multifilm" Static Brush Washers.

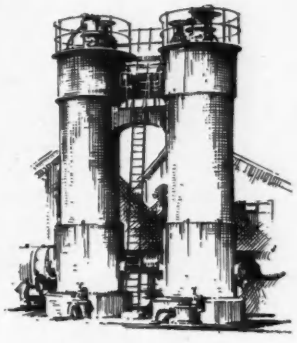
Stoke-on-Trent

1897	The Stoke Gaslight Company installed a Holmes Rotary Brush Washer.
1925	Five Works amalgamated into the Stoke-on-Trent Corporation Gas Department.
1897-1932	Six additional Holmes Rotary Brush Washers installed.
1933	Holmes "Multifilm" Static Washer at Etruria Works.
1933-1945	Five additional Holmes Static Washers installed.
1950	Work in progress: a complete plant on a new site.

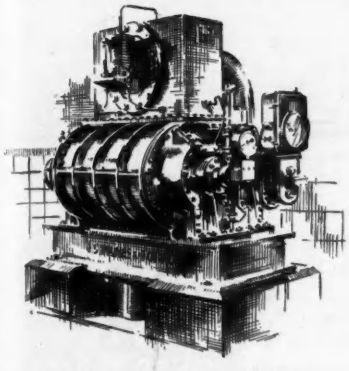
In addition to washers, practically every other type of plant used on a gasworks has been built at Stoke by W. C. Holmes & Co. Ltd.



Benzole Plant.



Holmes-Elex Detarrers.



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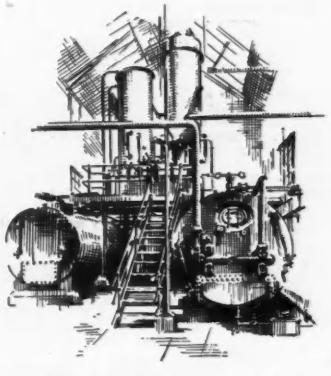

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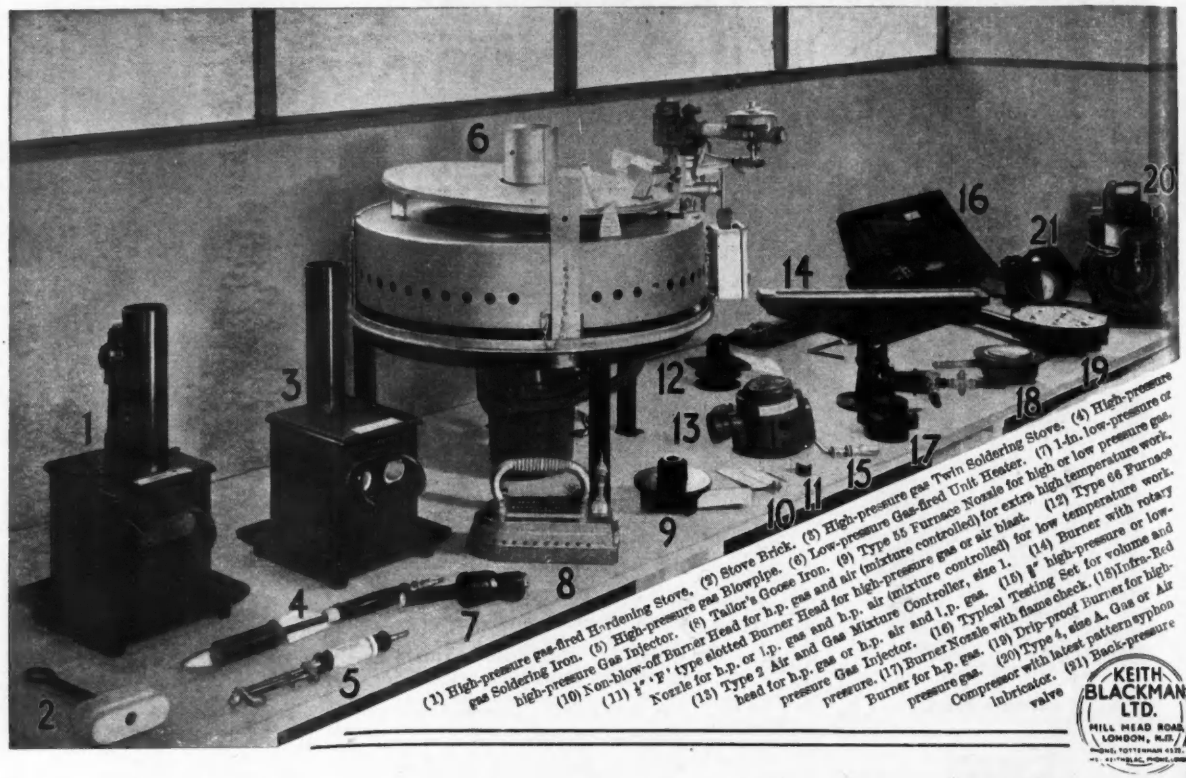
Some "KEITH-BLACKMAN" Gas Specialities



(1) High-pressure gas-fired Hardening Stove. (2) Stove Brick. (3) High-pressure gas Twin Soldering Stove. (4) High-pressure gas Soldering Iron. (5) High-pressure gas Blowpipe. (6) Low-pressure Gas-fired Unit Heater. (7) 1-in. low-pressure or high-pressure Gas Injector. (8) Tailor's Goose Iron. (9) Type 55 Furnace Nozzle for high or low pressure gas. (10) Non-blow-off Burner Head for h.p. gas and air (mixture controlled) for extra high temperature work. (11) ½" - 2" type slotted Burner Head for high-pressure gas or air blast. (12) Type 66 Furnace Nozzle for h.p. or l.p. gas and h.p. air (mixture controlled) for low temperature work. (13) Type 2 Air and Gas Mixture Controller, size 1. (14) Burner with rotary head for h.p. gas or h.p. air and l.p. gas. (15) ½" high-pressure or low-pressure Gas Injector. (16) Typical Testing Set for volume and pressure. (17) Burner Nozzle with flame check. (18) Infra-Red Burner for h.p. gas. (19) Drip-proof Burner for high-pressure gas. (20) Type 4, size A, Gas or Air Compressor with latest pattern syphon lubricator. (21) Back-pressure valve

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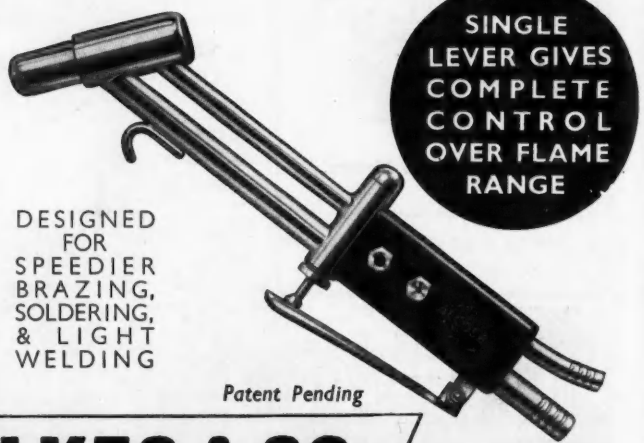

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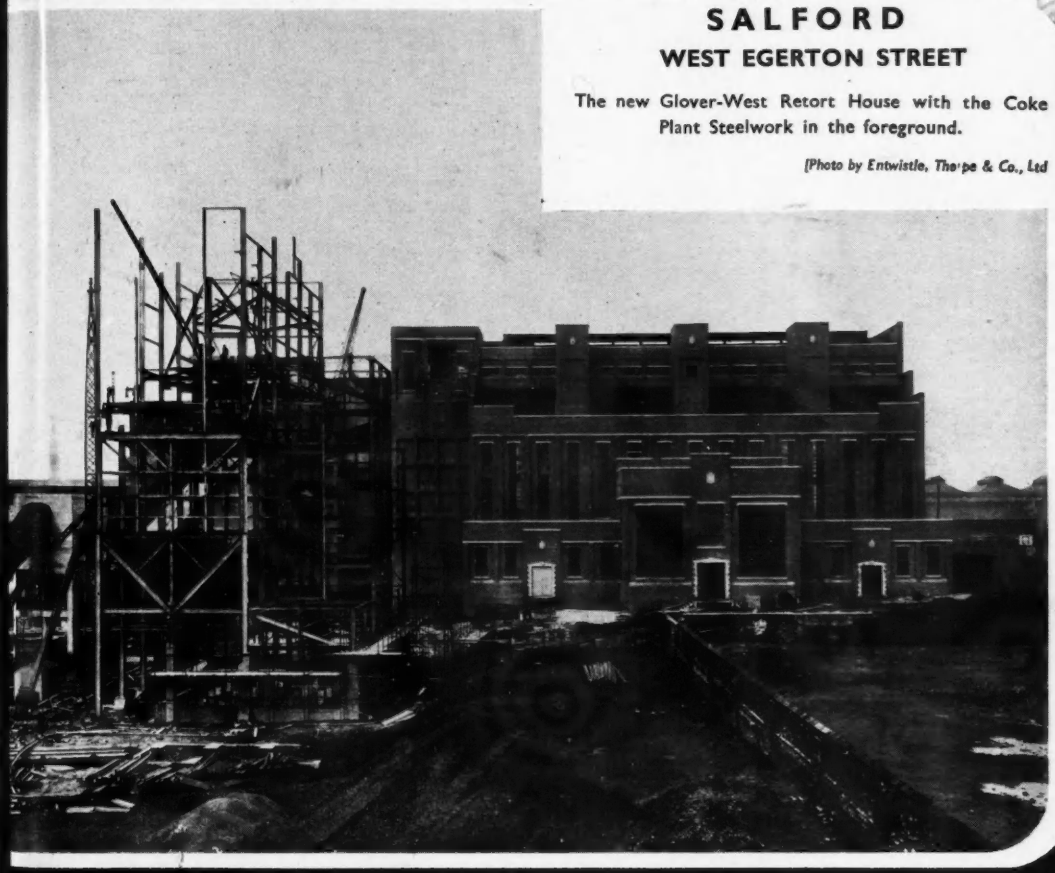

SALFORD

WEST EGERTON STREET

The new Glover-West Retort House with the Coke Plant Steelwork in the foreground.

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